Clinical Lectures
ON
CASES OF DIFFICULT DIAGNOSIS.

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LECTURE VIII.

TUBERCULAR PERITONITIS IN THE ADULT.

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I. ACUTE TUBERCULAR PERITONITIS.

THERE are seventeen cases of the acute form in which the state of the health of the patients previously to the first symptoms of the complaint are recorded. We are so much in the habit of supposing that the development of all tubercular diseases is preceded by a deterioration of the general health, that you will be surprised to learn that seven out of the whole number stated that their health had been quite good previously to the illness. Amongst these the disease seems to have made less rapid progress than in those who had been previously delicate, for, of the seven, only one died within one month of the appearance of the first symptoms, four within two months, and three lived beyond that period; whilst, amongst those previously delicate, four died within one month, three within two months, and only one survived beyond that time. It is therefore probable that the condition of the patient greatly influences his power of resisting the disease, and that the more healthy he had previously been the more likely is he to resist its inroads upon his strength. Of those who had been out of health before the symptoms of peritonitis showed themselves, six had suffered from cough, some for a considerable period; two of these had also been affected with hæmoptysis, two had complained of pains of the chest or right side, four had been losing flesh and strength, one had suffered from pleurisy, and another from febrile symptoms which had been referred to typhoid. Three females had been affected with amenorrhœa for many months before the first outbreak of the abdominal symptoms. But although so many had previously suffered from cough, advanced phthisis was not found in any at the beginning of the case, so that acute tubercular peritonitis is not a common result of chronic pulmonary disease. As so large a proportion had been quite well up to the first appearance of the symptoms, we shall not be justified, in any doubtful case, in concluding that it is not of a tubercular character merely because there is no history of previous ill health.

In this form of tubercular peritonitis the appearance of the disease was generally sudden, and, unlike the slow commencement of typhoid, the patient was usually at once compelled to go to bed. In only one the disease was ushered in with severe pains of the ankles, headache, and febrile symptoms similar to those of rheumatic fever; but these soon disappeared after his admission into the hospital. In ten out of eighteen cases in which the primary symptoms are recorded, the chief complaint at first was of pain and tenderness of the abdomen. The pain varied greatly in amount. In only one the patient is described as lying with the legs raised; but in most of them it was severe from the first. In one instance it was limited to the epigastrium, and was increased after food—a condition that would render the malady easy to be confounded with gastric ulcer; in another the pain was entirely referred to the iliac region, and, as there was also tenderness on pressure, there would be considerable chance of the pain being regarded as due to inflammation at or around the cæcum. Distension of the abdomen was nearly as common at the commencement of the illness as pain and tenderness, eight of the whole number having exhibited this condition. In some cases, however, that have come under my own notice, there have been neither pain, tenderness, nor distension at an early period of the illness. In most the bowels were at first constipated, but in several the complaint was ushered in with diarrhœa. It is, however, worthy of remark that the distension and diarrhœa occurred together in only two out of eighteen cases. Vomiting, more or less continuous, is recorded as an early symptom in four cases, and in only one vomiting and diarrhœa occurred together. Rigors or chills are mentioned only in one case.

The initial symptoms, then, in this form of the disease may be laid down as a sudden pain in the abdomen, not so severe as in ordinary peritonitis, but attended by tenderness on deep pressure, accompanied by constipation or diarrhœa, and sometimes by occasional vomiting. In addition to this there are general feebleness, increased rapidity of the pulse, and an elevated temperature, but this rarely rises above 102° in the commencement of the attack.

During the progress of the case pain of the abdomen was the most prominent of the local symptoms; it varied, however, in different cases, both as to its severity and its position. In twelve out of eighteen, it was sufficiently pronounced to attract the attention both of the physician and of the patient, but in the remaining six it was so slight that it might have been easily overlooked. When it was severe it sometimes disappeared for days together, or varied in intensity during the illness. In a few instances it was referred to the whole abdomen; more generally it affected first one part and then another; in many cases it was limited to the right hypochondrium, or to the epigastrium, and when in this latter situation it was sometimes increased by food. In twelve cases there was marked tenderness, increased by deep pressure, but in only one the weight of the bedclothes was sufficient to produce suffering. Mostly the tenderness was local, and varied in intensity during the progress of the disease. In five there was marked tenderness, although pain apart from pressure or movement was not complained of. In two instances where there was continuous pain there was never any tenderness. There was, in fact, a complaint either of continuous pain or of tenderness in every case except in one, in which severe pain was the first symptom; but it soon disappeared, and did not return.

Vomiting was noted as frequent in only four, and in two others there was constant nausea, although vomiting did not occur. In three it is especially remarked that vomiting never showed itself. Diarrhœa was severe and continuous in twelve out of the eighteen; in the remainder it occurred only occasionally. In eight constipation is mentioned as alternating with diarrhœa, but, as a general rule, the bowels were relaxed towards the termination of the case.

In every instance the temperature was elevated, but it presented no typical course as in typhoid. Generally speaking, it varied from day to day, rising in the evening and falling in the morning, and in most the difference between the morning and evening temperature amounted to one or two degrees. In two cases it varied between 99° and 100°; in one between 100° and 101°; in five from 100° to 102°; in two between 100° and 103°; in four between 102° to 104°; and in two between 101° and 105°. In all, the temperature was very irregular, and in one it fell below the normal shortly before death.

The pulse was generally quick from the first, but varied greatly in different cases: it was rarely of the normal frequency, and became more rapid as death approached.

Loss of flesh was a prominent symptom in all, and in many proceeded to an extreme degree. The appetite, with few exceptions, was defective from the commencement, and remained so until the end of the case. The tongue in every instance in which its condition is mentioned was "foul" or "furred," or "with red tip and edges"; in a few it became dry. Thirst was almost constantly present, and varied in severity with the rapidity of the disease.

Chest symptoms showed themselves in the majority of cases, but the abdominal usually remained the most prominent to the close of the case. Cough is mentioned as very distressing in seven, but the amount of expectoration was rarely profuse. When dyspnœa presented itself, it was mostly as the result of the pushing upwards of the diaphragm by the accumulation of gas or fluid in the abdomen, and not as the result of any pulmonary changes.

We may sum up the clinical characters of this form of tubercular peritonitis by saying that they consist of more or less acute pain of the abdomen, increased by pressure, accompanied by elevation of temperature of an irregular kind, the evening temperature being usually much higher than that of the morning, by increased rapidity of pulse, rapid loss of flesh and strength, thirst, loss of appetite, and continuous diarrhœa, or by diarrhœa alternating with constipation.

The cases of acute tubercular peritonitis may be included

in two groups. In one the febrile symptoms are the more prominent, and those relating to the abdomen are comparatively slight; such cases closely simulate typhoid fever. In the other the abdominal symptoms are the most marked, and the fever is moderate; such cases resemble ordinary peritonitis.

The physical signs varied in different cases, and also at different periods of the same case. In seventeen out of the eighteen the abdomen is stated to have been much distended; this was in most present from the first, but increased as the disease progressed. In six there was more or less fluctuation to be observed, but it was, as a rule, only in the earlier stages that fluid could be distinctly made out, and it was gradually absorbed before death. In the slighter cases of effusion the percussion note was dull only in the hypogastrium and in the flanks, and clear in the rest of the abdomen; but when the fluid was retained by adhesions, the dull parts alternated with others that afforded a tympanitic note. In most instances, as the fluid was absorbed the dulness disappeared, and the distended abdomen became everywhere tympanitic on percussion.

In three cases tumours could be detected in the abdomen, and in two of them the hardness felt on palpation was proved by post-mortem examination to have been the result of induration of the omentum. In the third they were caused by enlargement of the mesenteric glands, were movable by pressure, and varied in the place they occupied, probably in accordance with the variation in the amount of distension of the intestines. This case is sufficiently interesting to be recorded, as it is the only one in the whole series in which abdominal tumours were observed during life originating from such a cause.

CASE 1.—A man was admitted into my ward on Oct. 29th, 1885. He had always enjoyed good health, and there was no history of phthisis in his family. He had been an engineer in a ship, and fourteen weeks before his illness he had suffered from slight diarrhœa and some pain of the abdomen. Nine weeks previously he had been laid up with was looked upon as "typhoid fever," and on his recovery from it the medical officer of the ship detected some lumps in the abdomen. When admitted, the abdomen was found to be tense, but he complained of no pain in it. It was tympanitic on percussion, and some hard, solid tumours, the size of hen's eggs, could be distinguished. There was dulness over the cæcum. The appetite was good; the tongue furred; no nausea or vomiting. The liver was normal in size, but the splenic dulness seemed to be somewhat increased. There was some diarrhœa; the chest seemed to be normal, as ascertained by percussion and auscultation. — Nov. 6th: Abdomen much swollen; no dulness below clavicles, but slight comparative dulness in the right supra-spinous fossa, with diminished respiratory murmur and sonorous rhonchi.—9th: No pain of abdomen; no enlarged glands of groin; tongue furred; temperature 100°; pulse 120; urine normal. — 19th: Sonorous rhonchi at the bases of both lungs, also flatness over the sternal end of the right clavicle and over the right supra-spinous fossa. No tumours to be felt to-day, but some fluid can be ascertained in the abdomen; no tenderness on pressure.—Dec. 14th: Abdomen still swollen, with indistinct nodules in it, chiefly to be felt in the umbilical region; the dulness of the abdomen shifts with the position of the patient; some tenderness now in the right side of the abdomen; diarrhœa ceased; no night sweats.—21st.: Dulness and crepitation at base of right lung; pain now on pressure over the left side of the abdomen. The temperature, which had been previously a little above 101° rose to 105° shortly before death; the diarrhœa persisted to the end. At the post-mortem examination, the peritoneum was found to be studded with tubercles and some opaque nodules. There was great enlargement of the mesenteric and retro-peritoneal glands, forming caseous masses; a few ulcers were present in the ascending colon.

The stools varied greatly in character in different cases, but some are recorded as being like pea-soup, and resembling the stools of typhoid fever. In one instance the typhoid-looking stools were accompanied by an eruption of rose-coloured spots on the abdomen that disappeared on pressure, although post-mortem examination proved the absence of the characteristic ulcerations of enteric fever.

It will be remarked that in the previous case constant attention was directed to the lungs, and it is generally supposed that the condition of the pulmonary organs affords us a key to the nature of the peritoneal inflammation. It is true that, as a general rule, disease in the lungs or pleuræ is usually found on post-mortem examination, but the foregoing case shows that in the earlier stages there may not be sufficient physical signs upon which we can rely, and it is often only towards the termination of a case that we obtain trustworthy evidence of the existence of phthisis. Of the eighteen cases, two never presented any physical signs of pulmonary disease; in eleven there were at some period of the case physical signs, such as comparative dulness on percussion and crepitations; and in four the signs were only suspicious of tubercles, consisting of sonorous rhonchi or increased expiration in the upper parts of the lungs. In four the pleura was inflamed, and there was abundant exudation, the signs of which were readily detected during life. From these figures it is evident that although we may expect to meet with some physical signs directing our attention to the pulmonary organs, yet in a large proportion of the cases of acute tubercular peritonitis they will not be of so decided a character as to justify our relying upon them for the purposes of diagnosis.

Cases of this form of tubercular peritonitis usually end by death in about six weeks from the commencement of the symptoms; thus, of the eighteen, six died within one month, eight between one and two months, and only four survived beyond the eight weeks. The more prolonged cases were like that noted in Case 1, where the acute attack subsided for a time, and was replaced by less urgent symptoms. I think there can be no doubt that what was said in that instance to have been an attack of typhoid was in reality acute tubercular peritonitis, for the tumours were discovered in the abdomen shortly after the cessation of the fever, and there was no post-mortem evidence that the patient had ever suffered from ulceration of the small intestines.

You would naturally expect that in the very rapid cases the fever would be high and the symptoms of peritoneal inflammation well defined, and no doubt such is usually the case. But I have seen cases in which the fever was moderate, the abdominal symptoms not very prominent, and yet the patient sank rapidly, as in the following instance.

CASE 2.—A woman about thirty was admitted under my care complaining of pains of the limbs, loss of appetite, thirst, and other febrile symptoms. There was some distension of the abdomen. She also suffered pain near the umbilicus, and there was some, but not much, tenderness on pressure. The temperature was about 102°. The disease had come on suddenly, and as there was an unusual amount of typhoid fever at the time she was admitted, I diagnosed the case as one of mild enteric fever. At first she seemed to improve; the pains of the abdomen and the tenderness disappeared and the temperature fell, although not to the normal point. An exacerbation of all the symptoms occurred rather suddenly, and at the end of three weeks she sank from exhaustion. On post-mortem examination no ulceration of the small intestines could be discovered, but there were the ordinary appearances of acute tubercular peritonitis.

The error in the above case was very excusable; for whilst the prevalence of typhoid led us to look for it in every obscure case of fever, the comparatively small amount of pain and tenderness and the absence of well-marked physical signs in the chest seemed to forbid the idea of a tubercular affection of the peritoneum.

But other symptoms, such as spots on the abdomen and diarrhœa, may render the similarity of this form of peritonitis to enteric fever still more complete, and as an illustration I have appended the following case.

CASE 3.—A young woman, aged seventeen, was admitted into my ward on March 13th. There was no history of phthisis, and she had, previously to this illness, enjoyed excellent health. Three weeks before her admission she had been attacked with diarrhœa, headache, general weakness, and loss of appetite. When admitted, she complained of pain and distension of the abdomen. She lay upon her back, had vomiting about once in the twenty-four hours, and the diarrhœa was excessive. Temperature 100°. The next report mentions that the abdomen was still distended and tympanitic; it was tender on the right side, and *there were well-marked spots like those of typhoid* scattered over the abdomen; there were also some crepitations at the base of the right lung. In a few days the temperature had risen to 104°, and she complained of pain and tenderness of the left iliac fossa.—March 21st: Pain of the abdomen preventing sleep: abdomen still tympanitic.—24th: Vomiting daily, and pain still complained of.—26th: Vomiting ceased, and also the diarrhœa; bowels now confined.

The temperature had fallen to 100°.—29th: Some slight dulness, as compared with the opposite side, was remarked at the left apex; slight crepitation and increased vocal fremitus.—April 1st: The diarrhœa had returned, but the temperature was now normal.—9th: Patient much improved; pain in the abdomen quite gone, but the chest symptoms were rather more marked.—11th: Stools now solid; pain in the abdomen had returned, and temperature had risen to 102°.—28th: Some dulness now below left clavicle, and harsh inspiration; respiration feeble posteriorly; abdomen distended, but no pain.—May 11th: Vomiting returned; bowels now constipated.—17th: Was suddenly seized with great pain of abdomen and vomiting; temperature normal.—23rd: Diarrhœa very severe; pulse 140.—25th: Purpuric spots showed themselves on the chest. She was very feeble, had great difficulty in swallowing, and sank on May 29th. At the necropsy, the peritoneum was found to be thickened and studded with tubercles, the intestines were adherent, and the capsules of the liver and spleen thickened; there was an ulceration in the cæcum; a few tubercles were found at the left apex, but none in the right lung.

In the foregoing case you will remark that at the outset the pain and tenderness of the abdomen were but slight, whilst the elevated temperature, the rose-coloured spots, and the severe diarrhœa all pointed to typhoid. As the case proceeded, the similarity to enteric fever became less marked, the pain and tenderness of the abdomen increased, vomiting was more frequent, and the temperature at first diminished and afterwards became normal. The chest was examined from day to day for indications of tubercular disease, but, as you will remember, the physical signs were not clear, and only pointed to some mischief at the left apex.

In both of the above cases the more acute symptoms declined as time went on, and, as there was no great amount of pulmonary mischief detected after death, you will naturally ask whether such cases are not susceptible of cure; whether the peritoneal inflammation may not subside after adhesions have taken place, and the patient regain his former health. Unfortunately, I cannot call to mind a case of acute tubercular peritonitis that has ended in recovery, and I suspect the reason to be that the affection of the peritoneum is but a part of a general malady that so lessens the vitality of the patient that death is the necessary result. In acute tubercular peritonitis, as in cases of acute general tuberculosis, in which the peritoneum is not specially involved, it would appear that death results not so much from the effects of an inflammatory action set up by the tubercles, as from an affection of the whole system by the bacteria, of which the tubercles are the result.

The diseases with which we are most apt to confound acute tubercular peritonitis are typhoid fever and acute non-tubercular peritonitis, and in some instances the resemblance is so close that it is only by great care and watchfulness that we can avoid falling into error.

As a general rule, tubercular peritonitis of this kind begins suddenly, whilst typhoid is usually preceded by a period in which the patient has been weak, feeble, and feverish. In the former, pain in the abdomen is more marked, and there is tenderness over different parts; whilst pain in the latter is rarely severe, and any tenderness that may be present is confined to the iliac region. In tubercular peritonitis the temperature rises at once, and not regularly, as in enteric fever, and the pulse is usually more rapid. As the case proceeds the temperature varies more in peritonitis, spots are rarely observed, and the stools have not generally the typical appearance of those passed in typhoid; whilst at a later period the persistence or frequent returns of abdominal pain and tenderness and of vomiting, the variations of the temperature, the alternations of constipation with diarrhœa, and the increasing prostration, will in most instances enable you to distinguish between these diseases. In addition to these differences, you will in many cases be able to render your diagnosis more certain by the discovery of fluid in the peritoneum, or by the detection of a tumour in the abdomen; or you may find the signs of effusion in the pleura or of a consolidation in the apex of one or both lungs.

Still more difficult is it to distinguish between acute tubercular peritonitis and ordinary peritonitis when the former does not assume from the first the typhoid form. In many cases I believe it is impossible to arrive at a certain conclusion in the early stage, for both may attack persons previously healthy, both may be ushered in by similar abdominal symptoms, and it is only by watching the progress of the disease that you can form an accurate opinion. As a general rule, the pain, tenderness, and vomiting are less distressing in the tubercular form, the temperature is lower, and there is more usually diarrhœa than constipation. As the disease progresses, the abdominal symptoms recur from time to time instead of slowly subsiding, the temperature remains high, emaciation becomes more marked, the effusion into the peritoneum is very slowly absorbed, and you may discover signs indicating effusion into the pleuræ or pulmonary consolidation.

As regards the treatment of acute tubercular peritonitis in the adult. In the typhoid form I have usually treated the case as if it were one of enteric fever; that is, the patient has been kept at rest, the food has been restricted to liquids, and cold sponging has been employed whenever the temperature has been unduly high. Quinine in moderate doses in combination with opium has been prescribed to relieve pain and to check diarrhœa. In the cases in which the symptoms were chiefly abdominal the treatment has been directed as in ordinary peritonitis; poultices and hot fomentations have been applied to the abdomen, and small doses of opium have been given to relieve pain and diarrhœa. You must, however, be careful not to induce constipation, for it is usually followed by attacks of vomiting that quickly reduce the strength of the patient.

You may ask whether the washing out of the peritoneum, which is so successful in some cases of suppurative peritonitis, is likely to prove beneficial in this kind of case. I have never seen it tried, chiefly because the real nature of the disease has more frequently been suspected than actually diagnosed during life; but I do not think it would be of much value, as I have found the fluid serous, not purulent, and the patients have seemed to me to sink from the general acute tuberculosis, and not from the effects of the inflammation of the peritoneum.

(*To be continued.*)

Address
ON
LONDON, ANCIENT AND MODERN, FROM A MEDICAL POINT OF VIEW.

Delivered to the Medical Society of University College,

BY G. V. POORE, M.D., F.R.C.P.

(*Concluded from page 418.*)

WE get an insight into the methods of practice in the London hospitals in the sixteenth and seventeenth centuries from a series of papers in the St. Bartholomew's Hospital Reports, written by Sir James Paget, Dr. Church, and Dr. Norman Moore. In the eighteenth volume of St. Bartholomew's Hospital reports Dr. Norman Moore gives some interesting facts with regard to the first medical officer, Thomas Vicary, who was appointed somewhere near the year 1550. He lived in the hospital, wore a smart livery which cost fifty-three shillings, was sergeant-surgeon to Henry VIII. and his three successors, and wrote a book on anatomy. Thomas Vicary is represented in Holbein's picture of Henry VIII. granting a Charter to the Barber-Surgeons. He appears to have served abroad with the army, and to have been a person of considerable experience, and to have had a proper sense of his duty as a professional man and a citizen. Not so much is to be said for the first physician to St. Bartholomew's, Dr. Lopus, a Portuguese Jew appointed in 1561, whose main object in this world appears to have been to get money. He was convicted of conspiring with the Spaniards to compass Queen Elizabeth's death by poison, and in 1594 was hanged at Tyburn. Dr. Norman Moore gives another graphic picture of an Elizabethan surgeon in William Clowes, a man who was an army surgeon attached to the Earl of Leicester, and who in the intervals of foreign service was attached to St. Bartholomew's. Clowes appears to have been a man of learning and experience, devoted to his art, and well able to do battle with irregular practitioners. Of these encounters he doubtless had many, and he gives a lively description of an

interview with a quack vendor of a balm and plaster. "Then riseth out of his chayre, flering and gering, this myraculous surgeon, gloriously glittering like the man in the moon, with his bracelets about his armes, therein many precious jewels and stones of St. Vincent his Rockes, his fingers full of rings, a silver case with instruments hanging at his girdle, and a gilt spatula sticking in his hat, with a rose and crown fixed on the same," &c. Clowes was surgeon to Christ's Hospital, and we learn the interesting fact that in his day twenty or thirty children had the scurvy at a time—a fact due to a diet largely composed of fish and other salted provisions, with a scanty allowance of vegetables and a total absence of potatoes.

Sir James Paget, in an interesting paper (written in 1846 while he was filling the offices of Warden to St. Bartholomew's and Lecturer on Physiology) entitled "Records of Harvey," gives us some facts regarding this very great man, which help us to understand London "hospital practice" as carried on during the reigns of James I. and Charles I. Harvey was appointed physician to the hospital in 1609, seven years after taking his degree at Padua, and seven years before he imparted his great discovery of the circulation to the College of Physicians. He was appointed during the lifetime of his predecessor, Dr. Wilkinson, and was to succeed on the death or retirement of the latter, and, like candidates for hospital appointments of the present day, he came furnished with testimonials, one from the King and another from the President of the College of Physicians; and it is almost needless to say that his application was granted. On his appointment after the death of Dr. Wilkinson, the following "charge" was read to him:—"Physician,—You are here elected and admitted to be the physician of the poor of this hospital to perform the charge following—that is to say, one day at the least through the year, or oftener as need shall require, you shall come to this hospital and cause the hospitaller, matron, or porter to call before you in the hall of this hospital such and so many of the poor harboured in this hospital as shall need the counsel and advice of the physician. And you are here required and desired by us, in God His most holy Name, that you endeavour yourself to use the best of your knowledge in the profession of physic to the poor then present or any other of the poor at any time of the week which shall be sent home unto you by the hospitaller or matron for your counsel, writing in a book appointed for that purpose such medicines with their compounds and necessaries as appertaineth to the apothecary of this house, to be provided and made ready for to be administered unto the poor, everyone in particular according to his disease. You shall not for favour, lucre, or gain, appoint or write anything for the poor, but such good and wholesome things as you shall think, with your best advice, will do the poor good, without any affection or respect to be had to the apothecary. And you shall not take gift or reward of any of the poor of this house for your counsel."

In 1626 Harvey's stipend, which had been £25 per annum, was raised to £33 6*s.* 8*d.*, on condition that he relinquished his claim to one of the hospital houses. In 1630 he obtained leave of absence from his hospital duties, having been commanded by the King to travel with James Stuart, Duke of Lenox. Harvey was at this time physician extraordinary to the King, and in the year following was appointed physician in ordinary. Dr. Andrewes appears to have been appointed as Harvey's substitute during his absence, the governors showing themselves somewhat unwilling to accept Dr. Smith, who was Harvey's nominee. It appears that the work of the hospital increasing, and Harvey being much occupied at court, Dr. Andrewes was definitely appointed Harvey's coadjutor, or, as we should say, "assistant physician," with the yearly stipend of £33 6*s.* 8*d.* A set of rules was drawn up by Harvey and accepted by the governors, which are interesting in two particulars: first, as showing that Harvey was impressed with the necessity of limiting the relief afforded by the hospital, and that he foresaw the inconvenience likely to arise from a press of what we should call "out-patients"; and, secondly, that in the matter of prescribing internal remedies the chirurgeons were unable to act independently of the physicians. It further appears that there were "lock" hospitals in connexion with St. Bartholomew's, established in Southwark and Kingsland, in the disused Leper Hospitals (leprosy having then disappeared from London), for the reception of venereal cases. That venereal disease had long been very rife in London appears from the statement of William Clowes in 1596, that within five years over 1000 cases had been cured at St. Bartholomew's, and he adds, "I speak nothing of St. Thomas Hospitall, and other houses about the city, wherein an infinite multitude are daily cured." Harvey retired from St. Bartholomew's in 1643. In Harvey's time the staff consisted of two physicians, three surgeons (one of whom, John Woodhall, was the author of the "Surgeon's Mate," and in his twenty-four years' service amputated "many more than 100 of legges and armes," with a mortality of 20 per cent.), one surgeon for the stone, two surgeons or "guides" for the lock hospitals, an apothecary, and "a curer of scald heads." This latter functionary appears to have been a woman, and the salary paid to her for her services varied from £27 in 1623 to £126 in 1642, and there is evidence to show that she received three or four shillings for each scald head cured. According to Dr. Church, at St. Bartholomew's Hospital, where the diet (owing to the munificence of Dr. Radcliffe) has (since his time at least) been exceptionally good, so late as 1767 potatoes do not seem to have been introduced into any of the diets; greens were given on certain days of the week, but no other vegetables are mentioned." Dr. Church, in an article in St. Bartholomew's Hospital Reports (vol. xx.), called "Our Hospital Pharmacopœia," gives many interesting facts. The surgeons found their own drugs in 1549, and they were allowed £18 a year "because things pertaining to their faculty be very dear." In a note appended to an old formula in the St. Bartholomew's Pharmacopœia for a poultice, of which cow-dung was one ingredient, Dr. Church says: "Those who have not had the curiosity to look back at the old Pharmacopœias of the London Colleges of the sixteenth and seventeenth centuries can hardly imagine the disgusting nature of the substances they contained. In the catalogue of the officinal simples of our own London College for the year 1689 occur—'Homo Vivens: Capilli, ungues, saliva, cerumen, sordes, sudor, urina, stercus, sanquis, calculi, semen, lac, menses, secundinæ. Homo mortuus: Cadaver caro, cutis, pinquedo, ossa, cranium, usnea, cerebrum, cor, fel, manus.' And this at a time when R. Morton, Edward Tyson, Hans Sloane, and Richard Blackmore were Fellows of our College and Sydenham a Licentiate. ..... It is not until the fifth edition of the Pharmacopœia of our London College that we get rid of the old traditions handed down from the earliest periods of medicine. The 1746 Pharmacopœia may be said to mark a perfect revolution, or rather, I should say, reformation in the annals of pharmacy." This purging of the Pharmacopœia of disgusting things, "for the most part superstitiously and doatingly derived from oracles, dreams, and astrological fancies," was largely due to Dr. Plumptre, who was president of the College from 1740 to 1746, and the extent of it may be gained from the fact that the "simples," which numbered 645 in the fourth edition had, in the fifth, dwindled to 208. Many of the formulæ previously in use had been derived from the East, and notably from a learned pharmacologist called John of Damascus, concerning the date of whom authorities agree to differ.

The complexity of some of the old formulæ was prodigious. The antidote of Matthiolus against poisons and plague contained 131 ingredients, and Venice treacle, which was largely prescribed by Sydenham and even later physicians, contained over sixty. In the sixth (1788) edition of the Pharmacopeia sixty-three articles which appeared in the fifth edition were discontinued. Among those who stayed at his post during the plague must be mentioned Dr. Francis Bernard, apothecary, and subsequently physician (1678) to St. Bartholomew's Hospital. To rightly estimate his conduct we must remember that the governors of the hospital, as well as the physicians, had deserted it. Dr. Church gives the following extracts from the minutes of the Court: "Held at the 'Green Man,' near Laieton, in the county of Essex, Sept. 28th, 1665. Forasmuch as it was now understood that the two doctors were remiss to officiate or procure their business to be done as it ought to be. It was, therefore, thought fit for Dr. Bernard, the apothecary, whose ability is so well approved, should prescribe at the present for the patients in the said doctors' stead, until further orders thereon." At the same Court the salaries of the two doctors (Dr. Micklethwaite and Dr. Tearne) were ordered not to be paid.

The treatment of the patients in the early days of the hospitals was occasionally a little severe. Thus, Dr. Steele, of Guy's, has kindly furnished me with a few extracts made

from one of the old committee books of St. Thomas's: "1567. Patients were ordered to be whipped at the cross for misdemeanour. 1573. A hand-mill was ordered to grind corn to keep patients from idleness. 1598. Foul patients (i.e., venereal), notoriously lewd livers, were ordered when cured to be punished at the cross before being discharged." This reads like great severity, but severity was probably necessary in Southwark, which was rather a rough suburb of London. Thus an old map of Southwark given in Mr. Rendle's paper shows that in the year 1542 there were some eighteen large inns (of which the "Tabard" or "Talbot" was one). Here also in later times was Paris Garden, bull rings, bear rings, the Globe Theatre, and, lastly, the brothels or stews which were under the control of the Bishop of Winchester, the denizens being known as Winchester geese. Perhaps, therefore, it is not surprising that in this map are shown two sets of pillories and cages, and that the governors of the hospital found strong measures to be necessary to maintain discipline.

The anatomical lectures given by the Barber-Surgeons and Physicians were for a long time the only sources of practical anatomical knowledge; but the want of more opportunities for dissecting began in time to be felt by the apprentices of the surgeons employed at the hospitals. In the later days of the Barber-Surgeons' Company difficulties were experienced in obtaining subjects for dissection, and there is evidence to show that the officials having charge of executions were bribed to let the bodies of felons pass into private hands. William Cheselden (1688–1752) was one of the chief offenders in holding "private anatomies," which were contrary to the rules of the Company. Cheselden was renowned as an anatomist and surgeon, and did much to perfect the operation of lateral lithotomy, and must be looked upon as the real founder of the medical school of St. Thomas's. Before his time, however (viz., in 1695), complaint was made that the surgeons of St. Thomas's taught surgery to other than their own apprentices; and in 1702 the governors of St. Thomas's, while recognising the right of the surgeons to take pupils, ordained that "none shall have more than three cubbs at one time, nor take any for less than a year." "Private anatomies" began gradually to be more common, and in 1717 we come upon a record of "body-snatching," when "the widow of William Childers made complaint that her husband's corps, after its buryal in the burying place in Moorfields, was taken up by the gravedigger and sold to some surgeons, which corps was stopped at an inn in a hamper to be sent to Oxford" (Church). In 1726 the anatomical museum at St. Bartholomew's was commenced by John Freke, which is strong evidence of the growth of anatomical teaching, and in 1734 mention is made in the records of "the dissecting-room belonging to this house."

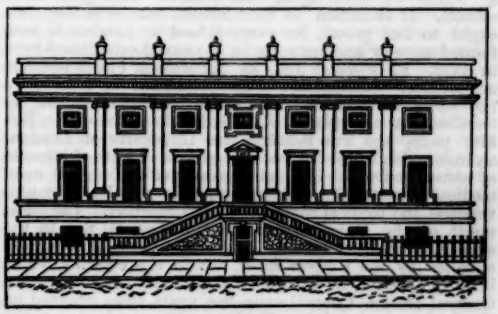
It was not till 1750 that leave was obtained for the regular making of post-mortem examinations at St. Bartholomew's. In 1767 an operating theatre was built; and finally, in 1822, an anatomical theatre was built for John Abernethy, who was really the founder of the Medical School of St. Bartholomew's. It was in the eighteenth century that the Royal Hospitals were found to be insufficient for the wants of the population, and private benevolence began to supply the deficiencies of Royal foundations. The Westminster Hospital is said to have been the first hospital established by subscription—viz., in 1719, the present building dating from 1732. I can do little more than mention these hospitals; but in doing so, with their dates, I would call attention to the fact that most of them were originally built in what were then the outskirts of the town, just as St. Bartholomew's was outside the walls, and St. Thomas's in the unimportant suburb of Southwark. Guy's was founded in 1722 by Thomas Guy, a bookseller, and, according to recent information, a publisher. He is said to have made his money partly by selling Bibles, partly by buying up sailors' prize tickets, and partly by successful speculations in the time of the South Sea Bubble. Be that as it may, he spent over £18,000 on the building of his hospital, and endowed it with other £220,000. St. George's was founded in 1733; the London Hospital in 1740; the Lock Hospital in 1746; Queen Charlotte's Lying-in Hospital in 1752; the Small-pox Hospital (originally at King's-cross) in 1746; the Middlesex Hospital in 1745; St. Luke's Hospital for Lunaticks in 1751; the Ophthalmic Hospital, Moorfields, in 1804; Charing-cross Hospital (originating from a dispensary existing in 1818) in 1831; the Royal Free Hospital in 1828; University College Hospital in 1833; King's College Hospital in 1839; Brompton Consumption Hospital in 1844; and St. Mary's Hospital in 1851. The above list includes only some of the chief hospitals of London, and it is impossible to over-estimate the service they have done to humanity, not only by relieving distress, but in disseminating a knowledge of medicine and surgery.

In bringing this part of my address to a close, I have only to mention that in 1745 the surgeons finally separated from the barbers. They obtained a new charter and removed to Surgeons' Hall in the Old Bailey (Fig. 5), where they remained till 1800, when they removed to the present house in Lincoln's-inn-fields, and became the Royal College of Surgeons of England.

In treating of a subject like that which I have chosen, it becomes necessary to adopt some plan of limitation, otherwise one would talk interminably. On this account I have resolved to give no details concerning the great London physicians and surgeons who flourished in the eighteenth and the beginning of the nineteenth centuries. If, therefore, I say nothing of Arbuthnot, Akenside, Mead, Pringle, Smellie, Baker, William and John Hunter, Cline, Sharpe, Percival Pott, Abernethy, Sir Charles Bell, Liston, Brodie, Astley Cooper, John Abernethy, William Lawrence, and many others, it is not from want of appreciation of their merits, but merely because to do so would take me too far. I purpose, therefore, to skip over the eighteenth and the beginning of the nineteenth century, and conclude my paper with a few remarks on the teaching of medicine in modern London.

Fifty years ago medical schools were very different from what they are now. The teaching was far less thorough, the

FIG. 5.



Surgeons' Hall, Old Bailey.

examinations far less complete. For example, according to Sir James Paget,[1] it was the universal custom for students to be apprenticed in the country, and to spend eighteen months in London before going up for the College and Hall. The examination at the College of Surgeons was conducted by ten examiners, who sat at a semicircular table, was entirely *viva voce*, and lasted twenty minutes. The teaching for these examinations was entirely by lectures, and it was no uncommon thing for one man to lecture on more than one subject. Thus, at St. Bartholomew's, Stanley, who was surgeon to the hospital, lectured on anatomy and physiology, and the senior physician on medicine and chemistry, and of clinical instruction there was practically none. The operating was swift and dexterous, the mortality after it great, "for there was scarcely a thought about blood infections.....none would hesitate to go straight from a dissection of a dead body to an operation on a living one, and at the first dressing of an amputation or any large wound the stench of the decomposing bloody fluid running from it was enough to infect the whole ward." The nursing at that time was of a rough order. The nurses were often intemperate, and almost always women who, morally and intellectually, might fairly be classed among the lower orders. Things are very different now, and it is only fair to state that this College and the University of London were undoubtedly the pioneers in that great improvement in medical education and medical examinations which has taken place during the reign of Her Majesty. This College was established in 1828, and within ten years of that date we find an illustrious staff of professors, nearly every

[1] "St. Bartholomew's Hospital Fifty Years ago."

one of whom has had an important share in increasing our knowledge of natural science in its widest sense. Turner and Thomas Graham, the latter certainly the greatest chemist of his time, were teaching chemistry; Lindley and Grant, each of them pre-eminent in his own department of knowledge, held the chairs of botany and comparative anatomy; while Dionysius Lardner, a man of great learning, in whom the power of expounding and lecturing was developed to an extraordinary degree, was professor of natural philosophy. Quain and Sharpey were teaching anatomy and physiology, and writing the world-famous text-book still known as "Quain and Sharpey." Carswell was professor of morbid anatomy, and producing the series of marvellous water-colour drawings illustrative of his subject which are, and ever must be, reckoned among the greatest treasures of our museum. Samuel Cooper and Liston were teaching surgery; Anthony Todd Thompson, materia medica; Davis, midwifery; Gordon-Smith, medical jurisprudence; while Elliotson and C. J. B. Williams, who is the sole survivor of his then colleagues, were setting an example in the teaching of medicine the effect of which is doubtless felt amongst us still. Here, then, more than fifty years ago, was a medical school complete in the modern sense. Our teaching has been altered in its details, and has tended to become more and more practical, but in principle it is the same now as it was then. Each branch of knowledge which is necessary for a medical man is provided for and controlled by a separate professor, and it is a remarkable fact, and redounds greatly to the foresight and wisdom of our founders, that the number of professorial chairs remains the same, the only addition being the all-important one of Public Health and Hygiene, in the establishment of which we were again the pioneers among medical schools. If imitation be the sincerest form of flattery, we ought to feel proud, for every school in London is now formed more or less perfectly on the model established here in 1828. Fifty years ago, as Sir James Paget reminds us, medical examinations were conducted in practically the same manner as that which is immortalised by Smollett in the pages of "Roderick Random." But fifty years ago was founded the University of London, an institution which lives and progresses in spite of torrents of abuse, and which has had a greater effect for good upon medical education in this country than all the other universities and medical corporations put together. The great merit of the University of London consists, not in the severity of its examinations (in which particular it is fully equalled by the Corporations), but in the *training* which it obliges each of its graduates to undergo, and when the General Medical Council some few years since reported on the final professional examinations, without reference to the two earlier examinations, it showed a want of appreciation of the principles which have guided this University. The University of London from the first decided that no one should become even an undergraduate who had not mastered his A B C, not merely the A B C of mathematics and certain selected languages, but the A B C of science also. There are many who still cavil at the breadth of the matriculation, and seem to forget that it comprises no subject which a decently educated man can in the present day ignore. It is argued that this wide smattering of knowledge which the matriculation involves is wrong, and that the best training for the mind is to master one subject thoroughly, a thing which nobody in this world ever did, and schoolboys of sixteen least of all. The correlation of knowledge is so complete that no one can attempt to master any one branch without some knowledge of many other branches; and in this fact is found the justification for the first examination which a medical student has to undergo. Which of the subjects of the matriculation is unnecessary for a decently educated doctor?

The Preliminary Scientific Examination is the most abused of all, but in making a knowledge of natural philosophy, chemistry, and biology precede the study of anatomy and physiology, the University of London is undoubtedly right, and there are signs that the other examining bodies are coming round to the same opinion. Of the final examination I need say nothing. There are those who say (even eminent persons, and notably one Aberdeen graduate) that the effect of the University of London has not been good, and that the medical graduates are not "practical" men. This assertion is too ridiculous to require an answer, for it is notorious that the London medical graduates have had more than their fair share in all the practical advances made by medicine in the last half century, and in medicine, surgery, midwifery, and public health they have more than held their own. It is very possible that a scientific training makes it rather difficult for a conscientious man to be dogmatic, and until the public is more highly educated than at present, the dogmatic practitioner is sure to have a large *clientèle* and will pass for a practical man. Scientific medicine has made enormous advances; but for a knowledge of the little arts, not always honest arts, which tend to increase our gains, John of Arderne was quite equal to any practitioner of the present day. He was, in one sense, pre-eminently a practical man, but whether we should do well to imitate him is more than doubtful.

There can be no doubt that, as a place to study medicine, London is, because of its enormous population, unrivalled.

In the year 1887, according to *The Hospital*, there were treated at the London hospitals and dispensaries 79,261 in-patients and 1,180,251 out-patients, or a total of over one million and a quarter, exclusive of those who received relief at the workhouse infirmaries, sick asylums, and lunatic asylums. It is true that a considerable portion of these patients are not so readily available for the student as they might be. The following are the numbers of patients (according to *The Hospital*) treated at the hospitals attached to medical schools in 1887:—

	In-patients.	Out-patients.	Total.
St. Bartholomew's ...	6000	150,000	156,000
London	8260	95,760	104,020
University College ...	2964	44,382	47,346
Guy's	5204	38,004	43,208
Middlesex	2413	27,714	30,127
St. Mary's	3315	26,637	29,952
St. Thomas's	4643	25,000	29,643
Westminster	2580	20,912	23,492
Charing Cross	1686	20,306	21,992
King's College	1811	17,248	19,059
Total ...	38,876	465,963	504,839

This gives a total of 1386 different patients for every day throughout the year. It is certain that no city in the world offers a field for medical study in any way equal to that of London. I think it is much to be regretted that, for qualified men, a composition ticket admitting freely to the practice of all the hospitals in London is not arranged for. If such a ticket were issued, and qualified men anxious to prolong their studies might, in return for a payment, feel themselves free to visit any or all of the great London hospitals, there can be no doubt that we should have a great afflux of students. I very much doubt the wisdom of the policy of trying to attract numbers of students by lowering the examination tests for a degree. This is an educational age, and we must not forget that some of the boys at the Board Schools have possibly a juster notion of physiology than had many of our professional ancestors. Science is being taught to all more and more every day. The druggist is now a highly educated man, and nurses are being drawn more and more from the educated classes. If the medical profession is to hold its own and to grow in popular esteem, it must be chary about lowering its educational standards at a time when the education of all classes is advancing.

CASES ILLUSTRATING RENAL SURGERY.

BY ARTHUR E. BARKER, F.R.C.S.,
SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

(*Concluded from p. 420.*)

CASE 3. *Perinephral abscess; nephrotomy; cured.*—L. B——, aged seven years, was admitted into University College Hospital on Feb. 21st, 1886, under the care of Dr. Barlow. This was a very delicate, stunted child, who had been treated medically fifteen months before in the hospital for somewhat similar troubles. The present illness began on Feb. 5th with severe abdominal pain and vomiting, thirst, anorexia, and constipation. During the previous winter she had had a severe cough with abundant expectoration, but no hæmoptysis; and during the three weeks before admission she had lost 7 lb. in weight and had become very weak and pale.

Physical examination revealed tubercular disease of both

chest and abdomen and lymphatic glands of neck, but not to a marked extent in any one of these situations, although the appearance of the child was markedly tubercular. The veins over the whole surface of the body were very clearly seen. The abdomen was generally tender, and on the right side from the ribs to the iliac crest was a considerable fulness. Under chloroform this was found to be due to an enlargement of the right kidney, and on aspiration of the latter on March 2nd, at Dr. Barlow's request, one ounce of thin pus, having a fæcal odour, was drawn off. There was also pus in the urine, which was regularly alkaline. The amount of pus passed with the latter was less for three days after aspiration of the kidney. The urea was 1·2 per cent. on the large quantity of urine passed daily.

On March 16th I cut down upon the kidney, and before reaching the latter evacuated fourteen ounces of thin pus from a perinephral abscess. The kidney itself was not distended, but as the disease appeared to have started in it, and was suspected to be due to stone, I first punctured and then incised the organ on its convex margin, cutting into the pelvis. No stone or pus was found in it. The wound was closed, except where the drain tube lay, reaching into the kidney. On the 18th there was a rise of temperature to 104·2°, and the patient vomited. Apart from this the patient steadily and rapidly improved and gained flesh. The wound slowly healed, and when the patient was discharged, on June 7th, the urine only came away by a small track in slight quantity. She was seen later by one of the nurses walking in the park quite well, and looking much stronger, the wound having completely closed. About a year or fifteen months after I heard that this little girl, who was one of the "infant prodigies" who perform at music halls, had died suddenly during one of her performances. The cause of death could not be ascertained.

This case is included in my series as one in which the kidney was opened, although plainly the bulk of the disease was in the perinephral tissues. The primary disease was, however, probably in the kidney, and of tubercular origin. The beneficial effect of the operation was most marked.

CASE 4. *Nephritic abscess; nephrotomy; cured.*—M. F—— (kindly referred to me by Mr. Farmer of Cowes), aged forty-one, admitted in August, 1887; a married woman; never very robust; no definite ailment complained of until November, 1884, when the present illness began. There was a family history of phthisis, but the patient's husband and children were healthy. She was married in 1883, and has borne two children—one in November, 1883, the other in February, 1887. The present trouble commenced in November, 1884, with a sharp attack of pain in the right loin, followed in about an hour by vomiting and a "shivering fit." No cause could be assigned for this pain, which was very severe, and lasted twenty-four hours. The pain was not increased by exertion, and when it ceased there was no tenderness or swelling over its former seat. Attacks in every way similar had regularly followed the first about every six or eight weeks until June, 1886, but not always of the same intensity, though invariably producing much prostration. Since June, 1886, the attacks had increased in frequency and duration, and had been followed by anorexia and foul tongue. During the twenty-four hours immediately following the onset of the pain the patient had frequently passed clots of blood, some "as large as an almond." Pain had also latterly been persistently present to a small extent between the attacks, and the lumbar region had become more and more tender, so that she felt the weight of her clothing. Since her last confinement (February, 1887) the attacks had been still more frequent and of longer duration, and had lasted a week, and within the six weeks previous to admission there had been three. After each attack the urine had been high-coloured, and had contained pus; the quantity, however, had been diminished, as also the frequency of micturition. After the last attack the patient was unable to pass urine for twenty-four hours, in spite of a desire to do so. This had not occurred before, and gravel was never seen. Menstruation had, as a rule, been normal, but the last three attacks had been followed by catamenia of unusual abundance. The pain had of late been rather increased on exertion. The patient had never noticed any tumour in the loin, but had grown larger round the waist, while losing flesh otherwise.

On examination, the right kidney could be felt somewhat enlarged and freely movable, sometimes lying as low as the umbilicus. The left kidney could not be felt at all. In the first twenty-four hours after admission 21 oz. of urine were passed, containing one-tenth of pus, and 184 grains of urea = 1·9 per cent. The urine was acid, with a dirty-white flocculent deposit, chiefly pus, and a few crystals of oxalate of lime. No red blood cells, sugar, or bile were present.

Taking this case as a whole, the most reasonable hypothesis appeared to be that the patient was suffering from renal calculus. Indeed, there seemed to be nothing wanting to complete the diagnosis. The case appeared a typical one of this condition. I had therefore no hesitation in cutting into the kidney, on Aug. 17th, in the usual way from behind by an oblique incision. The kidney was easily reached, and on incising it posteriorly, at which point it looked fairly normal, an abscess was opened deep in its substance, and a large quantity of pus was evacuated. The latter had the characters of the contents of a chronic abscess rather than those of an acute, and contained large shreds of a peculiar dirty-brown lining membrane. The latter I was able to peel out with my finger from the surrounding tissue of the kidney and its pelvis. A careful search was now made with finger and probe for calculi, but none could be found. I therefore placed a large drainage tube in the kidney, and stitched and dressed the wound in the usual way with salicylic wool and powdered iodoform. About an hour after the operation there was a severe rigor, but the patient was soon comfortable again.

The further course of the case was quite uneventful to the end. The discharge of pus and urine from the kidney was at first abundant, but always sweet, and gradually dwindled away. For the first week or so after operation an abundance of muco-pus was passed per urethram, but this also decreased steadily. On September 28th only urine came from the lumbar wound, no pus, and by the 29th the urine also ceased to flow. After the operation there was a slight rise of temperature for twenty-four hours (100·8° to 100°), but after this it was practically normal until the patient left the hospital. This took place on Oct. 24th, when she was looking and feeling well. There was still a trace of pus in the urine and a small sinus in the loin, yielding very little moisture. Since the patient returned to the Isle of Wight I have heard of her more than once through the kindness of her medical attendant, Mr. Farmer. The sinus in the loin soon closed completely, and she regained her strength rapidly. In a letter dated October 31st, 1888, she states that she "keeps wonderfully well, having had no pain to speak of since last winter."

CASE 5. *Renal calculi; nephrolithotomy; cured.*—T. H——, aged thirty, a coachsmith (kindly referred to me by Dr. Whittle of Brighton), was admitted on Oct. 31st, 1888, suffering from symptoms pointing to renal calculus. The patient was a slightly built man, rather anæmic, but otherwise not unhealthy-looking. He had always had abundance of food, and had been a teetotaller all his life. He was cut for stone in the bladder when two years old, and then remained in good health until he was ten, when he passed a small stone per urethram without trouble. When eleven years of age he began to suffer from pain in the left side, below the ribs, and this has lasted ever since. The pain has been aggravated by exertion, and has been worse at night. There has been no frequency of micturition. The urine has never been clear, but has shown no traces of blood so far as he knows. The patient's parents are alive and healthy, and do not suffer from any bladder troubles or gout. One of his brothers was cut for stone when young, and is now well; another passed "gravel," and has died of phthisis. There was no evidence of rheumatism, gout, or syphilis in the patient's personal history. The pain complained of has been much worse during the last year, and has obliged him entirely to give up his employment since January last. Since then he has at times been without pain, but never for more than three days. The pain is entirely local and does not radiate, but is always worse after exertion.

On Nov. 2nd I examined the patient under chloroform, and found nothing in the bladder. The right kidney could be felt; the affected one was not discoverable with the fingers. The respiratory, circulatory, and digestive systems appeared quite normal. The ophthalmoscopic appearances of both eyes showed nothing unusual. The urine was passed in full quantity; it was neutral or slightly alkaline, and deposited a great deal of muco-pus and phosphates and a microscopic trace of blood. The amount of urea varied on the estimate for each twenty-four hours between 1·5 and 2·5 per cent., or between 237 and 498 grains. A very careful study of the urine was made daily from the ad-

mission to the discharge of the patient, but the record is too long for insertion here. After the manipulations of the kidney under chloroform a much larger amount of stringy muco-pus than usual was observed in the urine for a day or two.

The diagnosis seemed so clear in this case that I had no hesitation in acceding to the patient's wish for operation. The latter was done on Nov. 9th in the usual way by an oblique incision in the left loin below the last rib. The kidney was very easily reached, and a stone was at once felt through the anterior part of the pelvis. It was so slightly covered by the latter that I departed from my usual practice of cutting through the convex border of the organ to reach its cavity, and instead made a short incision for about half an inch in the pelvis in a direction directly outwards. Through this the left index finger was introduced, and several stones as large as marbles were felt. These were removed with scoop or forceps, and without much difficulty, except the two last, which were locked in the calyces of the organ, and required stretching of the orifices of the latter to release them. Altogether six rounded and facetted calculi were removed, and some fragments of phosphatic matter, the total weight being 430 grains. It was now found that smart bleeding was taking place from some twigs of the renal artery, probably torn in dilating the opening in the pelvis. After several attempts to tie the vessels, I thought it better to simply catch them in the forceps, and to leave the latter in the wound for a few hours. They were therefore supported by a sponge stuffed into the opening around a large flanged drainage tube, a sal alembroth gauze dressing being firmly bandaged over all. There was severe shock, which lasted for some hours after the operation. Thinking that some of this was due to the dragging of the forceps on the pedicle of the kidney with its large nervous supply, I removed the instruments at 6 P.M. with much relief to the patient. By 9 P.M. he had much improved, and soon after passed urine. The next morning he was very well, and the sponge was taken out of the wound. There was no further bleeding.

There is little further to note, except uninterrupted recovery. The wound closed steadily, and after Dec. 13th no urine came from it. All pain in the kidney quite ceased after the operation. The patient was able to go home on Dec. 17th, only a button of granulation remaining at the seat of incision, which barely stained the dressings. The urine was almost normal, and only showed a trace of mucus; it was passed four times in the twenty-four hours.

In cutting through the pelvis in this case, instead of through the cortex of the kidney, I thought that the bleeding would be less than usual, but though the incision was only about half an inch either it or the subsequent stretching with the finger severed more than one of the renal branches, and hæmorrhage was free. There is no doubt, however, that the removal of the stones was greatly facilitated by the opening direct into the pelvis of the kidney. The effect of the dragging of the forceps on the pedicle of the organ, and the rapid disappearance of the shock after their removal, was most interesting, and gives, I think, an indication for future practice.

In conclusion, it may be specially pointed out that out of these five cases, all successful, four healed up completely, and in only one was there a permanent renal fistula. The cause in this was probably a narrowing of the ureter, owing to inflammatory contraction at the seat of the impaction of the calculus, which prevented the free passage of the urine into the bladder. The prospect of permanent closure of wounds into the kidney would appear from these cases to be better than perhaps we were formerly inclined to believe.

Harley-street, W.

HOSPITAL SATURDAY FUND, LIVERPOOL.—The first annual meeting of the representative general committee of the Liverpool Hospital Saturday Fund (recently organised for extending the Hospital Saturday movement), was lately held at St. George's Hall. The Mayor, Mr. E. H. Cockson, presided. The resolution passed by the workingmen's committee of the Hospital Saturday Fund, and by a subcommittee of the Hospital Sunday and Saturday Committee, was unanimously adopted. This resolution was to the effect that the workpeople of each firm contributing to last year's collection be requested to appoint a representative to act on the committee along with twelve members of the General Hospital Sunday and Saturday Committee.

AN INQUIRY INTO THE CAUSATION OF ASIATIC CHOLERA.

BY NEIL MACLEOD, M.D. EDIN.,
AND
WALTER J. MILLES, F.R.C.S. ENG.
WITH EXPERIMENTS ON ANIMALS BY NEIL MACLEOD, M.D.

(*Concluded from page 418.*)

Koch's Experiments with Guinea-pigs.—At the second Berlin Congress in 1885 Koch announced that he had succeeded in reproducing the disease in guinea-pigs without opening the abdomen. Finding the reaction of the contents of the guinea-pig's stomach always strongly acid, he neutralised this reaction by injecting into the stomach a solution of soda. He then found that, though the organism was thus enabled to pass through the stomach alive, no disturbance followed its presence in the small intestine. Many experiments of this kind failed. Only one animal became sick and died with signs like those of cholera, and this animal had aborted shortly before the experiment. In this case it was observed that there was some degree of peritonitis present as one of the results of the abortion. Koch then made some experiments to observe the conditions of the animal's digestion, more especially in the small intestine, and he found that its contents passed through that part of the gut in a very short period. Coloured foods were seen to pass from the stomach to the cæcum in a few minutes. It occurred to him that, as in Nicati and Rietsch's experiments, the more the bowel was handled the more successful they were, and, *vice versâ*, their success might be due to the lessening of the peristaltic action of the gut in consequence of the handling. The success in the guinea-pig that had aborted and in which peritonitis was present (a condition, too, accompanied by interference with peristalsis) suggested the same explanation—viz., that the normal peristalsis in this animal did not afford sufficient time for the multiplication of the organisms, so that they and their products might be hurried through the small gut before they had multiplied to the extent necessary to set up the changes constituting the disease, and from the acid reaction of the contents of the cæcum they were unable to multiply and do mischief in that part of the bowel. Recognising in opium a drug that would lessen peristaltic action, he made experiments with it, and finally decided that the injection of opium tincture into the peritoneal cavity was the surest means of bringing about this loss of peristalsis without otherwise injuring the animal.

Examination of the Objections urged against Koch's Experiments.—In this way Koch claims that he has reproduced the disease, but his experiments are not yet regarded in this country as sufficient, and the objections urged are: 1. The symptoms produced in the guinea-pig are not those of cholera in man, there being no purging, vomiting, or cramps. There seems to be little doubt that Pasteur has produced hydrophobia both in dogs and rabbits by material taken from the disease in man, but there seems to be as little doubt that the symptoms of that disease in man, the dog, and the rabbit, do not correspond in any two out of the three. Is it to be expected that cholera in the guinea-pig will present the same symptoms as in man? Will anyone maintain that a given case in man, without vomiting, purging, or cramps, is not one of Asiatic cholera? Such cases are certainly met with in man, and what is the exception in man may be the rule in the guinea-pig. 2. It is objected that death and the post-mortem appearances in the animals experimented with may be the result of some other cause than cholera. There is some truth in this objection, as animals may die, for instance, from mechanical injuries with the catheter used to inject the stomach, from the injection of fluid into the windpipe, from needle injuries in the abdomen, from an overdose of opium, or from peritonitis or septicæmia. Animals dying from such causes, and even those in which the injury might not be regarded as of itself sufficient to cause death, have been rejected from the experiments recorded in this paper. Such accidents might have been passed over without comment, but in the interests of anyone repeating the experiments, it seems wiser to give the details by which they may be avoided, and the needless sacrifice of animals thereby entailed.

With the indications afforded by a pharynx dissected for the purpose, the use of an English No. 3 catheter without the stilette, a wooden gag with a hole in it for the catheter and notched to receive the upper and lower incisors, the avoidance of force, and the exercise of a little patience, the passage of the catheter into the stomach of a guinea-pig is attended with as little injury as its introduction into the human bladder in careful hands. The entrance of the instrument into the trachea may be recognised by the character of the breathing and the shorter distance to which it passes without resistance, as contrasted with the œsophagus. If fluid be injected into the trachea, the animal dies in a few minutes.

In the early part of the investigation a number of animals had to be rejected, as they died without awaking from the opium sleep, after receiving the dose recommended by Koch—viz., 1 cubic centimetre of the tincture of opium to 200 grammes of the animal's weight. A series of cases was tried with smaller doses, and finally it was determined to measure the dose in each case by the effect on the voluntary muscular system. Repeated doses of 1 cubic centimetre, or less, were injected till the animal was sufficiently stupified to lie on the side or back for at least ten minutes when placed in that position. Several times the dose recommended by Koch had to be given, but usually a smaller one sufficed. After adopting this method no deaths occurred attributable to opium. Of the first seven animals receiving tincture of opium alone, injected with a Pravaz syringe disinfected by means of sublimate solution, and that only before the first injection, two animals died on the afternoon of the second day, having been lively that morning. These deaths were attributed to septicæmia, as no special injury could be detected, and none of fourteen opium-control animals died that were subsequently injected with a Koch syringe, the needle of which was heated red in the Bunsen flame, and then allowed to cool before each injection, and the glass sterilised in the hot box. Koch's syringe, having no piston, is more easily sterilised than the Pravaz syringe.

When the needle enters the peritoneal cavity, or when it is already there and the animal struggles, the bowel or a bloodvessel may be injured, but this seldom occurs if the animal be held with its back in the left palm, the front abdominal wall being projected forwards and made tense by the thumb and fingers on each side, when it is easy to just enter the peritoneal cavity with the needle point. An assistant should hold the fore and hind quarters. All vessels with which the needle and syringe came in contact as well as those that contained laudanum and fluids to be injected, were sterilised in the hot box before being used.

Of 142 experiments which were made, some were carried out at the Royal College of Physicians' new laboratory for research in Edinburgh, but owing to the restriction of the number of the experiments in the terms of the vivisection licence, and delays in extending or renewing the latter, the others were done at the Hygienic Institute at Berlin. The organism used was taken from the stools of a case of Asiatic cholera in Shanghai in October, 1887, pure cultivations being made from plates, and fresh gelatine tubes being inoculated at intervals of from three to six weeks. The organism retained its virulence, so far as guinea-pigs are concerned, till the following October.

Control Examination of Intestine of healthy Guinea-pigs.—Thirteen healthy guinea-pigs were killed, and the contents of the ileum examined both microscopically and by means of cultivations on plates. Normally, the small intestine was almost empty and contracted. Occasionally a little food could be seen in it, but it was never distended as it is after an animal has been injected with opium as described, in which case the contents were very similar to those of the stomach. In no instance was there any organism obtained by cultivation of the material taken from the ileum that could be called comma-shaped, though the microscopic examination sometimes furnished such forms in small numbers, as well as spirilla and large, curved, worm-like organisms, the latter being very numerous in the cæcal contents. An interesting observation was made on the contents of the ileum after death when opium alone had been given. Plate cultivations from these presented an appearance contrasting markedly with plates charged with the ileum contents of animals that had not had opium, the former containing in every plate large numbers of an organism not observed in the latter.

In the experiments presently to be described, all animals injected with cholera material, as well as those used for control experiments, were treated in the same way—viz., without any preliminary starvation; 5 cubic centimetres of a 5 per cent. solution of soda (Na_2CO_3), were first injected into the stomach by means of the catheter, and from ten to twenty minutes later a quantity of the cholera material or sterilised broth was similarly injected. Immediately thereafter the opium tincture was introduced into the peritoneal cavity in the quantity and with the precautions before described.

The effect of Opium on Intestinal Peristalsis.—The strongly acid reaction of the normal contents of the guinea-pig's stomach is neutralised by the soda injection, the reaction sometimes remaining neutral for six hours. The opium injection prevents the too rapid passage of the organism through the small intestine, thereby affording opportunity for its multiplication. Koch states that the injection of alcohol is attended by a similar effect on peristaltic movement. Klein admits the multiplication of the organism, but denies that there is interference with the peristalsis, of which he says: "It is not proved that injection of tincture of opium into the peritoneal cavity produces relaxation of the intestine and arrest of peristaltic movement; there is no proof given for this by Koch as regards the guinea-pig; on the contrary, there are experiments on record made on the dog, where the result of such injection was quickening of the peristaltic movement."[1] The effect quoted as regards the dog may have been the result of a small dose. No reference is given by Klein to his authority, so that it is not possible to determine the dose given to the dog. Klein seems to have forgotten for the moment that both alcohol and opium, when acting on nerve centres, stimulate in small doses, depress, and even arrest altogether, their actions, if the dose be large enough. Four guinea-pigs were injected, two with tincture of opium and two with rectified spirit, into the peritoneal cavity, in repeated doses till the animals were sufficiently stupefied to lie on the side when placed in that position. Two cubic centimetres of spirit were used in one case, and 2·75 cubic centimetres in the other, their weights being respectively 730 and 750 grammes. They were killed at intervals of from six to nine hours afterwards, when "relaxation of the intestine and arrest of the peristaltic movement" were amply demonstrated in all four by distension of the small intestine with food to a degree never seen in health. In the animals that received the spirit the stupefaction lasted longer, and there was increased vascularity of both peritoneal and pleural serous membranes resembling that present in the conjunctiva, while in the opium-treated animals this was not a feature.

If Klein had made this experiment, which he charged Koch with omitting, he would not have placed himself in such a false position. He would also have escaped another; for, in discussing this peristalsis question, he goes on to suggest that the gut, instead of being acted on in this way, is brought into "a diseased state" by the tincture of opium in the peritoneal cavity, and that the poison produced by the bacillus can then act and kill the animals. In support of this he performed thirty experiments with opium given in other ways, and injected into the stomach certain cultivation which, he writes, "were of comma bacilli of recent broth culture or of gelatine culture, and were beyond question or doubt the choleraic comma bacilli."[2] All these animals recovered, and the recovery he attributes to the absence of "the diseased state" of the gut, no opium tincture having been injected into the peritoneal cavity. But the animals may not have been stupefied—i.e., peristalsis may not have been arrested; or the recoveries may have been due to the attenuation of virulence of the comma bacilli used, since he omitted to place "beyond question or doubt" their virulence at the time of these thirty experiments by making control experiments with them under Koch's conditions and thereby producing death. Moreover, he gives no details of these thirty experiments as to doses, age of cultivations, or conditions of administration, so that it is not possible to estimate their value in other ways.

Dose of Opium necessary to lessen Intestinal Peristalsis.—It would appear that it is necessary to inject sufficient opium tincture to cause the animal to lie on the side or back when placed in that position; since, of animals receiving cholera material in doses sufficient to kill 60 per cent., of nine that did not receive sufficient opium to cause the animals to lie on the side when placed there only one died, while of fifty-four that were stupefied sufficiently to maintain the position

[1] Practitioner, 1887, March, p. 199 [2] Loc. cit.

on the side, thirty-eight died. This degree of narcosis may not be a necessary element in the interference with the intestinal peristalsis, but such a degree of narcotic effect was demonstrated to be accompanied by a well-marked degree of loss of peristalsis. Interference with peristalsis being insufficient in degree when large doses of the cholera organism are present, or insufficient in duration with small doses, the escape of certain of the animals that were sick may be accounted for by the organism and its products being passed on to the cæcum with its products before it had multiplied sufficiently to set up the changes necessary for a fatal result.

Cholera Experiments with Cultivations.—In seven cholera experiments varying quantities of a gelatine tube cultivation of comma bacilli were added to 5 cubic centimetres of sterilised broth, and injected into the animal's stomach. In the next twenty-seven experiments, a tube containing about 5 cubic centimetres of slightly alkaline sterilised broth was inoculated from a gelatine cultivation of the bacilli and incubated at 98° F. for twenty-four or more hours, and varying quantities of this were injected. Of these animals twenty-one died and thirteen recovered. The twenty-one animals recovered from the effect of the opium, sat up, and ran about, and those that had had small doses of the cholera material took food. On the following day they became sick, refused food, the coat stared, the edges of the eyelids became dry and gummy, and the hind legs were dragged, later becoming as if paralysed; some animals died on the second day, and others on the third or fourth.

Control Experiments.—Of eleven control animals treated in the same way, but receiving sterilised instead of cholera broth, all recovered. Three animals, after injection into the stomach of soda solution alone, seemed in no way affected.

Cholera Experiments with Bowel Contents.—From one of the animals that died after a dose of cholera material the small gut contents were collected in a sterilised vessel and injected in doses of 2 cubic centimetres into the stomachs of two other animals. These two animals died, and the contents of their small intestine were used in the same way, and so on through ten generations. Of twenty-one animals so treated, two recovered, nineteen died. The dose varied in the later generations between 0·5 and 2·5 cubic centimetres.

Control Experiments.—As control experiments to these, two animals received 5 cubic centimetres of the soda solution, 5 cubic centimetres of sterilised broth, and thereafter the usual dose of opium tincture. After six hours these animals were killed, and the contents of the small intestine collected and injected in doses of 2 cubic centimetres, and with the same precautions as the cholera material. Of four animals thus treated, all recovered.

Experiments with Cæcal Contents.—The cæcum of the cholera-infected guinea-pigs was usually distended with watery and (if the animal had died early) greenish contents, and contained comma bacilli in great numbers among a multitude of other forms. From an animal where this was the case 2 cubic centimetres of the contents of the *ileum* were injected into the stomach of one animal, and a similar quantity of the contents of the *cæcum* into that of each of three animals, after the usual soda injection of the stomach, opium tincture being given later. The former died; the three latter recovered without a sign of sickness. Unfortunately no plate cultivations were made of these cæcal contents to ascertain whether the comma bacilli seen were capable of growth like those of the ileum. Koch's contention that these organisms are killed in the cæcum of these animals is so far borne out by these three experiments.

Of the fifteen animals that recovered after injection of cholera material, seven were manifestly sick, two were slightly so, and six were not apparently affected. At the present time even Koch's most energetic opponent, Klein, will allow that the proof of Asiatic cholera in man is the presence of the comma bacillus either in the stools of a person taken suddenly ill, with or without vomiting or cramps, or, if there has been no purging, in the contents of the more or less distended, congested, rose-red, and paralysed-looking small intestine, these contents being watery and containing white flakes. If these appearances were present in man after having been dosed with a pure cultivation of comma bacilli, in a country where no cholera was about, would they not be accepted as proof of the presence of Asiatic cholera, even after doses of soda solution and opium, as in the guinea-pig? If this test is to be accepted in man, why is it not to be accepted in the guinea-pig?

Post-mortem Appearances in the Guinea-pig.—On post-mortem examination of these animals so dosed with comma bacilli, where death followed as described, the blood was fluid, thicker and darker than natural; the tissues of the thoracic and abdominal walls were markedly dry; the small intestine was throughout distended, congested, paralysed-looking, and occupied a much larger proportion of the abdominal cavity than usual; and the cæcum was distended with fluid or semi-fluid contents. If the animal had died early, the fluid was not quite clear in the small gut, there being present traces of food; still the watery character was very manifest, and mucous flakes were abundant. If the animal died on the second or third day, no food remains were to be seen, and the fluid in the small gut was the counterpart of the typical cholera stool in man. In either case, the comma bacilli were demonstrated microscopically and by cultivation, as in man. While the organism in the broth injected could be frequently counted in a microscopic field, in a drop of the small bowel contents from an animal having received such broth the bacilli might be so numerous that counting, without dilution of the fluid examined, was an impossibility. On floating the bowel in water the stripping of the epithelium could be well demonstrated. Two animals not included amongst those already mentioned, died on the fifth and eighth days respectively after injection of cholera material. In these no trace of comma bacilli could be found. From the appearance of the bowel it might be inferred that they had died in the reaction stage. In one case, that of death on the eighth day, and the only animal that had had loose stools, the intestine was lax, congested, the epithelial lining extensively stripped, and Peyer's patches could be seen standing out prominently and ulcerated.

Doses of Cultivations and Effects.—While 2 cubic centimetres of cholera small gut contents was a deadly dose, the same quantity of cholera broth derived from the original cultivation as described was by no means so deadly. This might be due either to the greater number of the organism in the bowel contents or to its increased virulence after passage through the animal. The organisms were certainly more numerous in the bowel contents than in the broths injected. As plate cultivations were made from the former and broth cultivations grown from these as nearly as possible under the same conditions as to quantity inoculated, time, and temperature in the incubator, the following experiments are worthy of record, though they were not made with the intention of comparing the relative virulence of the cultivations, and the quantities injected are not very suitable for comparison. Broth cultivations derived from the original cultivations brought from China, and therefore cultivated in gelatine for a year after being taken from the human stool, in doses of

5	cubic centimetres	killed	5	out of	7	animals.
2	,,	,,	0	,,	4	,,
1	,,	,,	1	,,	3	,,

Similar cultivations of bacilli which had passed through three generations of the guinea-pig, reckoning the first generation the first animal inoculated with bowel contents, in doses of

3	cubic centimetres	killed	4	out of	4	animals.
2·5	,,	,,	1	,,	2	,,
2	,,	,,	0	,,	2	,,

Similar cultivations of organisms passed through six generations, in doses of 2 cc., killed 3 out of 5 animals.

Attenuation of Virulence.—Koch states that the organism obtained during the last European outbreak of cholera and kept under cultivation in his laboratory has lost its virulence so far as guinea-pigs are concerned, so that his former results are no longer attainable. In the guinea-pig, the larger the dose of cholera material given, the earlier the onset of sickness and death, so that the latter may take place within twenty-four hours of the time of infection.

Objections examined.—Klein and Gibbes, in rejecting Koch's conclusion that the comma bacillus is the cause of Asiatic cholera, at page 32 of the Government report of their investigation in India, embody their strongest reason for this rejection in the following words: "The strongest reason for not admitting this kind of bacillar relation to the disease is this, that no bacilli exist in the blood or any other tissue of patients suffering from cholera." As the first manifestations of the disease are in the alimentary canal, and are usually very marked and followed by general constitutional disturbance, and as also after death the most marked departure from the normal condition is to be

seen in the small intestine and its contents, this determination that the bacillus must be present in the blood or elsewhere, if it is to be the cause of the disease, is somewhat difficult to understand. On similar grounds, Klein ought to deny that the pathogenic condition in the guinea-pig has any bacillar relation to the organism introduced into the alimentary canal of these animals; but when criticising Koch's results[3] he admits that the organism is pathogenic to guinea-pigs, though they act from the intestine and are not found in the blood or elsewhere; so that this "strongest reason for not admitting this kind of bacillar relation to the disease" he applies to man but not to the lower animals.

Another and similar objection of Klein's runs thus: "If, as many believe, the cholera dejecta *per se* were possessed of infective power, then it would be quite impossible to understand how it happens that the attendants, nurses, and physicians of cholera patients, those who handle the cholera dejecta, and the friends and relatives living in the same room remain so often exempt.[4]

The fact that doctors, nurses, &c., in attendance on cholera patients are not specially subject to the disease, whilst it points to the inference that the cholera poison is not usually transmitted from person to person under these circumstances, by no means proves that such transmission cannot take place. The contagious nature of the syphilitic poison, which is seldom transmitted to those in attendance, teaches so much, yet there cannot be a doubt that that poison passes from person to person. It is not usual to carry the contents of the intestine directly to the mouth; hence probably one of the reasons why those in attendance on the cholera sick do not suffer more than others. A little light on this question is perhaps furnished by the following occurrence. Dr. Bentley, acting health officer at Singapore five years ago, was called upon to deal with an outbreak of cholera at Telak Blanga, near the Peninsular and Oriental Company's wharf. The disease was believed to have been introduced from India by one of the steamers which land native and other passengers almost every week, but for some time no light could be thrown on the continuance of the outbreak. The cases were observed to occur in groups of two following each other at intervals of about two days, and on inquiry it was elicited that these were persons who had washed the bodies of the cholera dead. The washing of the dead is an important Mohammedan rite usually carried out with great care. Pressure was brought to bear upon the people to make them cease this habit for a time, but without result, until an edict was obtained from the Sultan of Johore for this purpose, and the high priest gave his sanction to the omission of the rite. When this was done no more cases of cholera occurred. Here the multiplication of the organism in the discharges on the skin about the anus and in the loin cloth would be very rapid at the Singapore temperature. The frequently observed occurrence of the disease amongst those washing the clothes of the cholera sick is an incident of somewhat similar character. Both are in keeping with the remarkable multiplication of the organism as seen on linen stained with cholera stools and kept under observation in the laboratory. The exemption from the disease on the part of attendants &c., and its incidence as described amongst the washers of bodies and clothes, suggest the explanation that in the fresh stools, or the quantities of them likely to be carried to the mouths of attendants directly, the dose, or rather number, of the organisms may be too small to set up the disease, while the larger number after multiplication outside the body may account for the greater risk to the washers, more particularly in hot climates and seasons. Klein demands that "in all bacteriological inquiries referring to infectious diseases, the results of such inquiries, if they are to be accepted as well-established, must be in harmony with the well-founded facts discovered by epidemiology"; adding, "Now I maintain with Pettenkofer that some important facts of our knowledge concerning comma bacilli do not harmonise with well-established epidemiological facts."[5] The just application of this test will depend on what he means as regards "some important facts of our knowledge concerning comma bacilli." It is somewhat puzzling to find him applying the test, and in consequence saying that it is impossible to believe that the disease could not have failed as it did on certain occasions cited by him, or that epidemics could have ceased when they did, if the comma bacillus were the cause of the disease, since, to quote his own words, "the comma bacilli live and thrive wherever and whenever there is nitrogenous material; in fact, they are in this respect conspicuous by their small selective power. They grow in all localities, in all climates, and in all seasons."[6] Is it possible that all nitrogenous material, all localities, all climates, and all seasons afford a suitable soil, suitable reaction, suitable temperature, and moisture, *without any one of which* growth and multiplication of the comma bacillus is impossible, which he himself sets forth as "important facts" relating to that organism in an exhaustive and excellent account of it?[7] It may be asked of Klein, if the organism grows, as he says, in all localities, climates, and seasons, wherever and whenever nitrogenous material is present, *why has he not been able to find it?*

Pettenkofer believes that the poison of cholera is discharged in the stools, and that it is an organised one, capable of multiplying outside the body; and, though these conditions are fulfilled by the comma bacillus, he expressed the opinion at the Second Berlin Congress, in 1885, that that organism could not be the cause of cholera, since it is so easily destroyed by drying, and there appears to be no lasting form or spore to bridge over this difficulty. He had in his mind the problem of epidemic occurrence in relation to the multiplication of the poison in the soil above the ground water-level. Below that level the soil is certainly wet; but above it, it cannot be said to be dry, except in a very loose sense, as is frequently seen in the moist condition of pieces of paper, cloth, &c., dug out of the soil above ground water-level. As regards the destruction of Koch's organism by drying, it has to be remembered that the drying process has been tested in air alone, and that only on complete withdrawal of moisture does it die. With the exception of sand, under ordinary circumstances, desiccation of the organism would be almost, if not quite, impossible in any soil except on the very surface. Thus, death of the organism dried in the air accords with the almost universal belief in the non-propagation of the disease by the air, and does not interfere, as Pettenkofer thought, with the part played by the soil in the occurrence of epidemics. Pettenkofer also thought that because Emmerich's bacillus had been found in the blood and certain of the organs in some cases of cholera, and produced symptoms in the guinea-pig like those of cholera, it might with more justice be considered the cause of the disease. He also suggested that Koch's organism might be normally present in man and multiplied in consequence of the disease. Emmerich's bacillus has since been found in the normal stools, in the air, and elsewhere, and the symptoms referred to are produced in common by a number of other ptomaine-producing organisms. Again, easy destruction of the comma bacillus by decomposing organisms has been regarded by Klein and others as a further objection, as they think the bacillus could not multiply in the presence of filth and filthy habits, which all authorities regard as factors in the spread of the disease. The conditions of survival of the organism under domestication in the laboratory doubtless throw some light on the struggle for existence in the natural state, but the confinement of the contest between the comma bacillus and other organisms within the limits of test-tube and plate cultivations cannot be regarded as representing the limits of the struggle amongst natural filth and filthy habits, any more than the contest and its results between cats and mice in a room represent the struggle in nature, and the result as to the survival of mice.

Nearly all observers are agreed that for the spread of the disease and the production of epidemics, there must be a local disposition and one of season.[8] While some regard these as simply conditions favouring the multiplication of the poison outside the body and its distribution, others, according to Pettenkofer's hypothesis, think that the poison fresh from the stool is only capable of causing isolated cases of cholera, and cannot cause epidemics until the poison has undergone some change outside the body. Koch's organism is certainly capable of multiplication outside the body, but whether such a change in it is necessary, as is demanded by Pettenkofer's hypothesis, can only be settled by a knowledge of its life history in relation to the production of epidemics, a branch of the subject as yet unexplored.

Summary of Conclusions.—1. The comma bacillus of Koch is invariably present, and associated with certain changes in the small intestine in cases of Asiatic cholera. 2. There is no evidence to show that it is a normal inhabitant

[3] Practitioner, March, 1887, p. 200. [4] Ibid., April, 1887, p. 276. [5] Ibid., p. 272. [6] Ibid., p. 275. [7] Ibid., Jan. 1887, p. 6-19. [8] Örtliche und Zeitliche Disposition.

of the human alimentary canal, and therefore no proof for the assertion that it is a result of the disease. 3. The means used to introduce the comma bacillus into, and those used to lessen the peristalsis of, the small intestine of the guinea-pig cannot be regarded as causing appearances like those of Asiatic cholera, or as causing the death of the animal, far less a mortality of over 60 per cent. 4. Pure cultivations of the comma bacillus introduced into the stomach under the precautions described are pathogenic to the guinea-pig. 5. Injected with similar precautions, the contents of the ileum from those animals killed by injection of pure cultivations of the bacilli act in the same manner as pure cultivations of that organism. 6. The organism multiplies in the small intestine of the animal, and there are therewith associated changes similar to those in man in Asiatic cholera. 7. There is strong evidence, therefore, for regarding the comma bacillus of Koch as the cause of Asiatic cholera.

A CASE OF

ACUTE INTESTINAL OBSTRUCTION CAUSED BY A FISH-FIN LODGING ABOVE A MECKEL'S DIVERTICULUM;

LAPAROTOMY; RECOVERY.[1]

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J. W——, aged thirteen, a healthy boy, with no history of previous abdominal trouble, had some fried fish for supper on Friday, Dec. 2nd, 1887, and slept as usual. Next morning he felt ill and took no breakfast. At 9 A.M. he vomited, and an hour later his bowels were moved naturally, and again at noon, after which obstinate constipation set in. Pain in the abdomen soon followed, and vomiting continued at short intervals all through that day and the following (Saturday and Sunday). On Monday his father took him to a herbalist's shop, and he had a dose of medicine. As he obtained no relief, on Tuesday morning he was seen by Dr. G. Johnston, who at once administered appropriate treatment in the way of rectal injections &c.; but, though a little fæcal matter came away after an enema, the main symptoms persisted, and accordingly on the evening of the same day (the fourth of his illness) the lad was sent to the Sheffield Public Hospital and Dispensary.

On admission (Tuesday, Dec. 6th, about 10 P.M.) he was in a somewhat collapsed condition; his hands and feet were cold; his face pinched; pulse 100, small, but not hard; respiration 16, markedly thoracic; temperature 98°. The tongue was slightly furred, not dry. The abdomen was scarcely distended, and not very tender or hard. Peristaltic movements of the intestine were very plainly visible, especially to the left of the umbilicus. No hernia could be detected, nor any tumour in the abdomen, which was resonant except in the loins. The rectum was found to be empty, and nothing abnormal was felt through its walls. There was no tenesmus, and no passage of blood or mucus. No flatus had been passed per anum since the last natural action of the bowels. The urine was normal in quality, and had been passed in about natural quantity. The vomiting, which still continued, was of a bilious character. The pain was referred mostly to the region of the epigastrium, and was paroxysmal.

It was at once decided that the abdomen should be opened and explored, and meanwhile the patient was made as warm as possible by means of hot-water bottles &c. Assisted by my colleagues, I operated about midnight. Before commencing I again examined the abdomen and rectum whilst the patient was under ether, but nothing abnormal was found. All the ordinary antiseptic precautions by means of carbolic acid were observed, with the exception of using the spray. On making a small central vertical incision between the pubes and the umbilicus, two or three ounces of serous fluid escaped when the peritoneum was opened. Having ascertained by a finger passed through the wound that the inguinal and obturator regions were clear, and feeling no band &c., I enlarged the incision to about three inches in length and exposed several distended coils of small intestine, much congested, but free from lymph. On tracing one of them downwards, I soon arrived at the site of the obstruction, a tight and thick band abruptly separating the swollen bowel from its pale and contracted continuation below. On examination it was soon seen that the constricting band was a Meckel's diverticulum attached at its extremity to the mesentery. The arrangement was peculiar. The diverticulum which (as we afterwards saw) was a little over two inches in length, came off from the bowel at nearly a right angle, between its mesenteric and free borders. It then passed through an opening in the mesentery of the part of the bowel from which it sprang, and closely encircled the bowel immediately above its own origin, its extremity being firmly attached to the mesentery, half an inch or more above the opening through which the diverticulum passed. Thus the constriction was not of a coil or knuckle of intestine, but of the tube at one level only, as if a cord were tied round it at that spot. The adhesions between the end of the diverticulum and the mesentery, which were of firm connective tissue and evidently very old, were divided by nipping up and tearing through successive portions of tissue by means of dissecting forceps and without the loss of so much as a drop of blood. The contracted portion of the ileum at once began to fill, and the diverticulum, now freed and distended, stood out, closely resembling in form and size the penis of a child with a long unretracted prepuce. The portion of bowel which had been constricted and the diverticulum itself being obviously in a recoverable condition, the wound was now closed, the diverticulum falling in contact with its deep edges. I did not trace the ileum downwards to ascertain the distance of the diverticulum from the cæcum.

After the operation the patient was restless for some hours, and bilious vomiting continued till 7 or 8 A.M. Before noon on Wednesday, the 7th, the wound was dressed, and shortly afterwards—just twelve hours after the operation—the bowels were moved. The motion was of semi-liquid consistence, and amongst it lay a dark-coloured body, which on examination proved to be a piece of the fin of a fish. It was hard, flat, of triangular shape, and terminated at each end in a sharp-pointed spine, two similar spines projecting from one of the edges. It measured exactly three-quarters of an inch in length and a quarter of an inch in breadth. Within the next twelve hours similar small motions were passed five times, making six evacuations during the first twenty-four hours after operation. Five minims of laudanum were given at intervals of two or three hours till evening, and the same dose was afterwards continued two or three times a day for nearly a week, and then once a day until the bowels acted only once in twenty-four hours. This, however, did not happen till the eleventh day, the number of evacuations being six on the first day, then three, six, three, five, three, three, three, two, four, on each consecutive day, till on the eleventh and each of the three following days there was but one. By this time the motions had become solid. The vomiting, which had ceased before the bowels were first opened, never returned, and the patient took milk fairly well, but refused beef-tea. On the evening of the first day (Wednesday, 7th) the pulse was 144, the respiration 24, and the temperature 101°. On the second day (Thursday, 8th) he had a slight cough and an evening temperature of 102·6°. Next morning I examined his chest, and found dulness at the right base with some tubular breathing. Six leeches were applied, and by evening his temperature had fallen to 101°; the pulse being 136, and the respiration 48. He then went through an acute attack of pneumonia involving apparently the whole of the right lower lobe. In spite of this, however, he did well. On the fourth day he was allowed egg in arrow-root. At the end of the first week he had bread, and a week later fish and rabbit. The wound healed rapidly, and in three weeks from the operation he was up in the ward quite convalescent.

In connexion with the foregoing the following points may be considered:—

1. *Etiology.*—This case is unusually complete, inasmuch as the immediate exciting cause of obstruction was made manifest in the discovery of the fish fin in the first motion passed after operation. The disposition of the diverticulum—unique so far as I know—placed a ring of ileum in the constant grasp of a band a little over two inches in length,

[1] The notes of this case were read before the Sheffield Medico-Chirurgical Society, and the patient shown, on Jan. 19th, 1888.

so that the available circumference of the bowel at that spot cannot have exceeded that measurement, and its diameter must have been but about two-thirds of an inch. Probably this condition of things had existed for years, for the connexion between the end of the diverticulum and the mesentery was of thoroughly organised, firm tissue. So long as the boy had a digestible diet all went well, but the first time he swallowed a hard indigestible substance of greater length than the diameter of the grasped ileum, obstruction followed, and strangulation was no doubt rapidly induced. As to exactly how the constricting cord became tightened and the lumen of the ileum obliterated, it is not, perhaps, quite obvious; but it seems likely enough that the foreign body stuck lengthwise across the bowel immediately above the part narrowed by the diverticulum, and thus by stretching the narrowed gut in one diameter converted the channel through it into a slit, the diverticulum kinking at the two ends of the slit. Distension of the bowel above would then tend increasingly to press together the two sides of the slit-like orifice.

2. *Diagnosis.*—The diagnosis of the exact anatomical cause of acute obstruction is seldom possible. In the present case we were content to suppose that probably a band or some form of internal hernia existed; yet the process of exclusion might, I think, have enabled us to get a little nearer to an exact and fairly confident diagnosis than we did. External hernia was, of course, excluded by examination. The onset of the symptoms was too sudden for obstruction from fæcal accumulation, new growth, or stricture. Intussusception, though suggested by its frequency and the youth of the patient, seemed excluded by the absence of tumour and of tenesmus, and, indeed, the patient, though young, was well past the age of early childhood, when it may be specially looked for. Volvulus of the sigmoid, unlikely at his age, would probably have been preceded by constipation, and accompanied with less early and constant vomiting. As to foreign bodies, the patient was too young for gall-stones, and there was no history of fruit-stones, coins, &c. Yet, in reality, he gave us the history of the foreign body which did, no doubt, set up the obstruction. It was not, however, till after I had found the narrow ring through which the ingesta had to pass that I recognised his "fish supper" (it was bought ready-fried fish) as likely to have contained an indigestible morsel large enough to cause obstruction. Strangulation by a band or diverticulum, or by a hole in the omentum or elsewhere, or some form of internal hernia, including obturator hernia and hernia at the internal inguinal ring,[2] was to all appearance the most likely condition, and the age, sex, and previous good history of the patient might reasonably have had some influence in suggesting the existence of a Meckel's diverticulum as the probable cause of the lad's symptoms. Mr. Durham (in his article "Intestinal Obstruction," in "Quain's Dictionary of Medicine") gives seventy-five cases of intestinal obstruction as due to the presence of a Meckel's diverticulum or diverticular appendage, and from his and other statistics these diverticula appear to be accountable for about one-tenth of all cases of acute intestinal obstruction, exclusive of intussusception and external hernia. Mr. McGill, in an interesting paper in the *British Medical Journal* for Jan. 14th, 1888, mentions two cases of his own, both occurring in males (one aged thirty and the other fifteen), in which obstruction was caused by a Meckel's diverticulum. And in the museum at the Sheffield Public Hospital and Dispensary we have five specimens which have been obtained at post-mortem examinations during the last two years. Four occurred in men, one in a woman. Only one had occasioned fatal obstruction, the case being a young man admitted in a moribund condition. As a general rule, they seem to occur about four times as often in males as in females, and very commonly give rise to obstruction during youth or early adult life.

3. *Symptoms.*—One symptom in this case is, I think, of peculiar interest—namely, the very marked peristaltic movement of the coils of small intestine which was visible before operation. Dr. Fagge was, I believe, the first to point out[3] the dependence of this sign on hypertrophy of the bowel caused by chronic partial obstruction (such as that produced by contractions in the small intestine); and Mr. Treves endorses the view, at the same time pointing out that the phenomenon depends partly on distension of the coils of intestine, and that it is much more easily recognisable through thin abdominal walls than through thick.[4] In the present case I referred the existence of visible peristalsis partly to the thinness of the parietes, depending on the youth of the subject, and partly to the fact that he had had from a herbalist a dose of medicine which was in all probability a purgative. But, in the light of the condition found at the operation, the case forms no exception to Dr. Fagge's rule; for there must have long existed at the site of the encircling diverticulum a practical narrowing of the gut; so that the case may really be said to have been one of the supervention of acute obstruction upon chronic contraction, which, though it had not been sufficient to cause chronic obstruction, may well have produced hypertrophy of the muscular walls of the bowel above. It is noteworthy that the vomit did not approach to being stercoraceous even at the end of four days' obstruction, with frequent vomiting. This is, I think, nothing unusual; indeed, anything like true stercoraceous or fæcal vomiting is decidedly rare, and there is certainly no need or justification to wait for the vomit to have even a fæcal odour before deciding that operative treatment is necessary. The inability to pass flatus is, I think, a more useful symptom, and was present in this case, as it almost invariably is in complete obstruction.

4. *Treatment.*—Mr. McGill, in the paper above referred to, raises the question of allowing the distended coils of intestine to leave the peritoneal cavity whilst searching for the obstruction. Where much distension exists, it may, no doubt, be very difficult or even impossible to prevent it; but where that is not the case, it is, I think, easy to pass a few inches at a time of the distended bowel through the fingers in the wound, and thus to trace it down to the obstruction. In the present case, I began to trace the bowel in the wrong direction, but this soon became obvious by its less swollen and congested condition a foot or so higher up. No, doubt, however, the better method is that recommended by Mr. Hulke and others—namely, to start from the cæcum and trace the undistended ileum up to the site of obstruction, seldom many feet off. Another question of importance is the treatment of the diverticulum itself. Mr. Treves advises the operator to excise it, lest it should again give rise to obstruction. But it must certainly add considerably to the risks of the laparotomy to do so. The prolongation of the operation, the chance of immediate fæcal escape into the peritoneum, and the uncertainty of the stitching being perfectly secure, have to be weighed against the chance of a second accident of obstruction. Probably the tendency should be, as with hernia operations, to make as thorough a cure as possible, and as seems safe in each individual case.

5. *Course.*—The course of the case after operation was disturbed, and the prognosis made less hopeful, by two complications—looseness of the bowels and pneumonia. With regard to the former, it may perhaps have been traceable in part to the supposed administration of a purge before the patient came under regular treatment. At all events it called for the employment of opium, and would have been less likely to occur had opium been previously given. I do not agree with Mr. McGill in his condemnation of the common use of opium. Its danger in these cases is that it masks (or rather relieves) symptoms. But when once the surgeon has obtained leave for and decided upon operation, whether in internal obstruction or in hernia, this should no longer constitute a danger, since the surgeon has no business to be deceived by the improved condition of the patient which follows. The formation of a temporary fæcal fistula in Mr. McGill's case throws doubt on the benefit of the purge he administered. The early occurrence of pneumonia, which would of course have been more serious had the patient been older, points, I think, to its origin in a chill received during the patient's conveyance to the hospital at night, and in a somewhat collapsed condition. His hands and feet were cold when he arrived, and, on the other hand, the operation room was warm, and he was less than an hour under the influence of the anæsthetic. This only tends to emphasise the danger of delay in the operative treatment of acute intestinal obstruc-

[2] For this last condition I have twice performed laparotomy in young men. One patient (H. C——, aged twenty-four) died with diarrhœa on the second day after operation. He had been ill with symptoms of obstruction for nineteen days, and had had absolute constipation, with vomiting, for five days previous to laparotomy. The other (W. W——, aged twenty-six), on whom I operated on the fourth day of complete obstruction, made a rapid and complete recovery.

[3] Guy's Hospital Reports for 1868.

[4] Intestinal Obstruction, 1884.

tion. Had the case been rendered more severe by the implication of a much larger piece of bowel in the strangulation, it is quite likely that laparotomy, in such circumstances, and at the end of the fourth day, would have been too late.

Sheffield.

THE ETIOLOGY OF CROUPOUS PNEUMONIA.

BY GEO. M. STERNBERG,
MAJOR AND SURGEON, U.S.A.

(*Concluded from p. 422.*)

The presence of Micrococcus Pasteuri in the Salivary Secretions of Healthy Individuals.—In September, 1880, while engaged in investigations relating to the etiology of the malarial fevers, I injected a little of my own saliva beneath the skin of two rabbits as a control experiment. To my surprise the animals died, and I found in their blood a multitude of oval micro-organisms, united for the most part in pairs, or in chains of three or four elements. These experiments are recorded in my paper entitled "Experimental Investigations relating to the Etiology of the Malarial Fevers," published in the report of the National Board of Health for 1881, pp. 74 and 75. In December of the same year Pasteur observed this micrococcus in the blood of rabbits which died (Dec. 13th) as a result of an inoculation with the saliva of a child who died of hydrophobia in one of the hospitals of Paris.[1]

Following up my experiments made in New Orleans (in September, 1880), in Philadelphia (January, 1881), and in Baltimore (March, 1881), I obtained the following results:—"The saliva of four students, residents of Baltimore (in March), gave negative results; eleven rabbits injected with the saliva of six individuals in Philadelphia (in January) gave eight deaths and three negative results; but in the fatal cases a less degree of virulence was shown in six by a more prolonged period between the date of injection and the date of death. This was three days in one, four days in four, and seven days in one."[2]

The fact that the micrococcus in question varies very much as to its pathogenic power, as a result of conditions relating to the medium in which it develops &c., was insisted upon in the paper from which I have quoted, and has been fully established by later researches (Fränkel, Gamaléia). I found that cultures which had been kept for one or two weeks no longer exhibited any virulence when injected beneath the skin of a rabbit. On the other hand, the virulence was increased by passing through the rabbit. This is shown by the following quotation from the same paper: "In the dog the vital resistance is competent to withstand the assaults of the micrococcus—injected subcutaneously—having the potency of those found in my saliva, and the result of such an injection is simply a circumscribed abscess. But the increased power (which is perhaps simply a more vigorous and rapid development) gained by cultivation in the body of the rabbit enables these organisms to overcome the resistance of the dog, and a diffuse cellulitis results of a fatal character." This result was obtained in a single experiment in which one cubic centimetre of serum from the subcutaneous cellular tissue of a rabbit recently dead was injected beneath the skin of a dog. Again, I say in the same paper: "Unfiltered serum from a recently dead rabbit has invariably proved fatal in smaller quantity, and in less time than is required by the saliva in the first instance, showing an increase of virulence as the result of successive cultivation of the organism in the body of a susceptible animal."

Clayton,[3] in a series of experiments made in Philadelphia in 1882, injected the saliva of seven individuals into eighteen rabbits. Five of these died within five days, and nine at a later period. In a paper published in the Journal of the Royal Microscopical Society (June, 1886) I say: "My own earlier experiments showed that there is a difference in the pathogenic potency of the saliva of different individuals, and I have since learned that the saliva of the same individuals may differ in this respect at different times. Thus, during the past three years, injections of my own saliva have not infrequently failed to cause a fatal result, and in fatal cases death is apt to occur after a somewhat longer interval—seventy-two hours or more; whereas, in my earlier experiments, the animals infallibly died within forty-eight hours."

Fränkel, whose first publication was made in 1885, discovered the presence of this micrococcus in his own salivary secretions in 1883, and has since made extended and important researches with reference to it. The saliva of five healthy individuals and the sputa of patients suffering from other diseases than pneumonia, injected into eighteen rabbits, induced fatal "sputum septicæmia" in three only. When he commenced his experiments, his saliva was uniformly fatal to rabbits, but a year later it was without effect.

Wolf[4] injected the saliva of twelve healthy individuals and of three patients with catarrhal bronchitis into rabbits, and induced "sputum septicæmia" in three. Netter[5] examined the saliva of 165 healthy persons by inoculation experiments in rabbits, and demonstrated the presence of micrococcus Pasteuri in 15 per cent. of the number.

Vignal,[6] in his recent paper upon the micro-organisms of the mouth, says: "Last year I encountered this microbe continually in my mouth during a period of two months; then it disappeared, and I did not find it again until April of this year, and then only for fifteen days, when it again disappeared without appreciable cause.

Immunity.—With reference to the question of immunity from pneumonia when the specific agent of this disease is present in the salivary secretions, or the failure, in many cases, to extend from the invaded lobe to other portions of the same lung, Gamaléia offers the following explanation: "In order to study better the mechanism of the immunity of the healthy lungs in presence of the streptococcus Pasteuri, we made the microscopic analysis of the sputa of an individual who, in the month of December, 1887, experienced an attack of fibrinous pneumonia under our observation, and who subsequently had chronic bronchitis and expectorated constantly a quantity of pneumonic microbes, virulent for rabbits. The sputa were of mucus and adhered to the vessel; under the microscope they presented almost a pure culture of the specific streptococci, some polynuclear globules, and the large cells called endothelial (Staubzollen), having a large round nucleus and filled with granules. Attentive examination showed that the last-mentioned cells, which have quite the character of macrophages, contained enormous quantities of streptococcus Pasteuri in various stages of disintegration. One may find in the same cell typical diplococci mingled with contracted and angular forms that by comparison alone can be assimilated with the specific microbes. In this way one may be convinced that the débris contained in the macrophages is the remnant of pneumonic microbes. The polynuclear leucocytes also contained the streptococcus lanceolatus, but in much smaller quantity. These phenomena give us, it seems to me, the explanation sought of the immunity of the pulmonary tissues. The pathogenic microbes, even when they exist in a very great quantity in the bronchial mucus, and arrive in the pulmonary alveoli, are arrested there in their development by the macrophages (Staubzollen), which take them in and digest them. In this struggle the endothelial cells may also die and be rejected in the sputa."

This explanation, in accordance with the so-called "Metschnikoff theory," has been offered by the writer in an attempt to explain immunity from infectious diseases generally at a date which I believe to be prior to the publication of Metschnikoff's first paper. And it was the observation of the presence of the same micrococcus in the leucocytes of inoculated rabbits that led me to this explanation. In support of my statement, I quote from my published works as follows:—

In a paper read at the meeting of the American Association for Advancement of Science in Cincinnati, Aug. 18th, 1881,[7] I make the following remarks: "It has occurred to me that possibly the white corpuscles may have

[1] Comptes Rend., Acad. des Sciences, 1881, vol. xcii., p. 159.

[2] National Board of Health Bulletin, Washington, vol. ii., 1881, p. 781. Also in Studies from the Biological Laboratory, Johns Hopkins University, Baltimore, vol. ii., 1882, pp. 183–200.

[3] Virulence of Normal Human Saliva. Medical Times, Philadelphia, June 17th, 1882.

[4] Wiener Med. Blatter, 1887, Nos. 10–14.

[5] Compt. Rend. Hebdom. des Séances de la Société de Biologie, 1887, Nov. 4th, No. 64.

[6] Archives de Physiologie Norm. et Path., 3e série, tome x., p. 292.

[7] A Contribution to the Study of the Bacterial Organisms commonly found upon Exposed Mucous Surfaces and in the Alimentary Canal of Healthy Individuals. Illustrated by photo-micrographs. Proc. Am. Assn. Adv. Sc., 1881 (Salem, 1882), vol. xxx., pp. 83–94. Also in Studies from the Biological Laboratory, Johns Hopkins University, Baltimore, vol. ii., No. 2, 1882.

the office of picking up and digesting bacterial organisms when by any means they find their way into the blood. The propensity exhibited by the leucocytes for picking up inorganic granules is well known, and that they may be able not only to pick up but to assimilate, and so dispose of, the bacteria which come in their way does not seem to me very improbable, in view of the fact that amœbæ, which resemble them so closely, feed upon bacteria and similar organisms."

In a paper[8] published in the *American Journal of the Medical Sciences* in 1881, after showing that Pasteur's "exhaustion theory" of immunity is untenable, I say: "The view which I am endeavouring to elucidate is, that during a non-fatal attack of one of the specific diseases the cellular elements implicated, which do not succumb to the destructive influence of the poison, acquire a tolerance to this poison which is transmissible to their progeny, and which is the reason of the exemption which the individual enjoys from future attacks of the same disease."

In the chapter on "Bacteria in Infectious Diseases," in my work on Bacteria,[9] published in the spring of 1884, but placed in the hands of the publishers in 1883 (preface dated Aug. 15th, 1883), I observe: "In the disease produced by inoculation with saliva, or with a culture fluid containing the micrococcus under consideration, owing perhaps to the rapid development of the micrococcus, no such limiting wall of inflammatory exudation is established, and we find the subcutaneous connective tissue diffusely infiltrated with serum which swarms with the parasites. The failure to restrict the inroads of the parasite may not be due alone to its power of rapid multiplication. It is not improbable that some poison is produced during its active growth, which lowers the vital resistance of the tissues and prevents the occurrence of adhesive inflammation. And it may be that the true explanation of the immunity afforded by a mild attack of an infectious germ disease is to be found in an acquired tolerance to the action of a chemical poison produced by the micro-organism, and consequent ability to bring the resources of nature to bear to restrict invasion by the parasite." The theory of immunity here clearly stated has subsequently received strong support from the experiments of Salmon (1885) in this country, and of Roux[10] in Pasteur's laboratory.

But does a single attack of acute lobar pneumonia afford any protection from subsequent attacks? This question may be divided into two. Is that portion of the lung invaded in a first attack subject to a similar process at a subsequent date? Is the individual who has suffered an attack of fibrinous pneumonia subject to a second attack? The second question—if we speak of pneumonia in a general way, not differentiating catarrhal pneumonia from acute fibrinous pneumonia—must be answered in the affirmative, for that second attacks of pneumonia may occur cannot be questioned. As to acute lobar pneumonia, which we have learned to look upon as a specific infectious disease, I am not able to give a definite answer from my own experience or from an examination of the literature at hand, and the question is here stated for the purpose of eliciting information.

Morphological and Physiological Characters.—Figs. 1 and 2 are from camera lucida drawings, and represent the

FIG. 1.

Micrococcus Pasteuri from blood of rabbit inoculated subcutaneously with normal human saliva. (Dr. S.) Magnified 1000 diameters.

FIG. 2.

Micrococcus Pasteuri from blood of rabbit inoculated subcutaneously with fresh pneumonic sputum from a patient on the seventh day of the disease. Same amplification as Fig. 1.

organism as it appears in the blood of an infected rabbit or in active growth in a suitable culture medium when stained with one of the aniline colours. Although when in active growth the elements are of an oval or lance-oval form, this micro-organism is nevertheless a micrococcus, or, according to the classification of Zopf, a streptococcus, for it approaches the spherical form in old cultures, in which the development is tardy or has ceased altogether, and in surface cultures upon agar-agar is often seen in long chains as in Fig. 3. In blood and in recent cultures in a liquid medium it is commonly seen in pairs or in chains of three or four oval elements. The appearance of a capsule seen in Fig. 4 is far from being constant, and is best seen in preparations made from the blood of an animal recently dead or in the rusty sputum of pneumonia. In unstained preparations this so-called "capsule" appears as an aureole or transparent envelope, which can only be seen with difficulty owing to the fact that its refractive index very nearly approaches that of the fluid in which it is immersed. In my first paper, which is illustrated by photo-micrographs (1881), I remark: "When a culture tube containing bouillon made from the flesh of the rabbit is inoculated with a minute quantity of blood taken from a rabbit recently dead and containing the organism shown in Fig. 1" (a photo-micrograph showing it in rabbit's blood), and "is placed in an incubating oven at a temperature of 37° C., there is a rapid multiplication of the micrococcus, which, it is proved experimentally, retains its virulent properties. While in process of active multiplication, the organism also retains, at least to some extent, its characteristic form as shown in Fig. 1, and presents the appearance of being surrounded by an aureole, as already described. But in a limited amount of the culture fluid the process of multiplication by fission soon ceases. When the liquid is examined during the first few hours after inoculation it is seen to be slightly opalescent, and upon microscopical examination is found to contain distributed through it an abundance of micrococci, solitary, in pairs, and in short chains. At a later period (forty-eight hours) the micrococcus will be found chiefly at the bottom of the fluid in groups and zoogloœa masses, and without the aureole which characterises it, especially in the blood of the rabbit, during its active multiplication. ..... If a culture fluid in which the micrococcus has been present in abundance be examined at a later date (one or two weeks), the organism will no longer be found, at least in a recognisable form; and, so far as my experiments go, the culture fluid no longer exhibits any virulence when injected beneath the skin of a rabbit."

FIG. 3.

Surface culture of micrococcus Pasteuri on agar jelly, showing development of long chains. Same amplification.

FIG. 4.

Surface culture of micrococcus Pasteuri from blood of rabbit injected with pneumonic sputum, showing the so-called "capsule." Same amplification.

Micrococcus Pasteuri is not motile, and does not, so far as is known, multiply in any other way than by simple binary division. Its thermal death-point, as fixed by myself in 1881, is 140° F. (60° C.), the time of exposure being ten minutes. The facts that it does not grow at temperatures much below that of the human body, that it requires for its development a neutral or slightly alkaline culture medium, and that it is quickly destroyed in fluids undergoing putrefaction decomposition, indicate that it is a true parasite, in the human mouth or elsewhere, and that it is unable to maintain a saprophytic existence externally to the bodies of warm-blooded animals.

In my experiments on disinfectants, in which this micrococcus served as the test organism, made in Baltimore in 1881 and in San Francisco in 1883, I obtained the following results:—Mercuric chloride: 1 part in 20,000 destroys the vitality of the micrococcus in bouillon cultures, and 1 part in 40,000 arrests development. Iodine, dissolved by potassium iodide: 1 in 1000 destroys vitality, 1 in 4000 arrests development. Sulphuric acid: 1 in 800 destroys vitality; 1 in 1600 arrests development. Carbolic acid: 1 in 500 destroys vitality. Zinc chloride: 1 in 100 destroys vitality. Alcohol: 25 per cent. required to destroy vitality.

[8] What is the Explanation of the Protection from subsequent Attacks, resulting from an Attack of certain Diseases, &c. Am. Jour. Med. Sc., April, 1881, p. 376.

[9] Wm. Wood and Co., New York, 1884.

[10] Sur l'Immunité contre le Charbon conférée par des Substances Chimiques. Annales de l'Institut Pasteur, Aug., 1888, vol. ii., No. 8.

Salicylic acid 4 per cent., sodium hyposulphite 8 per cent., ferric sulphate 16 per cent., boracic acid 4 per cent., sodium biborate 4 per cent., and sodium salicylate 4 per cent., were found not to destroy vitality. The time of exposure in these experiments was two hours.

In my experiments made in Baltimore (1881), in which the blood of a rabbit recently dead from an inoculation with material containing this micrococcus was subjected to the action of the disinfecting agent for half an hour and then injected into another rabbit, I found that certain chemical agents—sodium hyposulphite and alcohol,—when mixed with the septic blood, modified its virulence without destroying the vitality of the micro-organism; and that the inoculated animal recovered after such an inoculation, and was subsequently immune from the effects of the unattenuated virus. I believe that the experimental evidence here referred to is the first recorded with reference to the attenuation of virus by chemical reagents. This fact is recognised by the French author Vallin, in his "Traité des Désinfectants," published in Paris in 1882 (p. 222). On the surface of agar jelly, micrococcus Pasteuri forms a slightly elevated, nearly transparent growth, and in "stick cultures" in the same material grows to a limited extent along the track of the needle, forming a nebulous line.

The results obtained by Fränkel with reference to the influence of various temperatures on the pathogenic power of this micrococcus are as follows:—In fluid media a temperature of 42° C., maintained for two days, suffices to neutralise the virulence of the culture. The same result is obtained at a temperature of 41°, maintained for four or five days. Between 39·5° and 40·5° the virulence is no longer abolished, but is so far modified that inoculations no longer give rise, in the rabbit, exclusively to the typical condition of the blood and enlarged spleen of septicæmia, but simultaneously to an intense localisation of the virus in the serous membranes of the heart and lungs. Netter has shown that rabbits which recover after receiving an injection of saliva containing this micrococcus are subsequently immune from the form of septicæmia to which it gives rise. According to this author, the saliva of convalescents from pneumonia during the first two or three weeks is less virulent than that collected at a later date, and animals inoculated with it usually recover and are subsequently immune. Fränkel also found that the micrococcus, although still present in the sputa of convalescents from pneumonia, no longer presents the same degree of virulence, and that death may occur as late as the sixth day after the inoculation is made, instead of within twenty-four to forty-eight hours, as is the case when the rusty sputum of acute pneumonia is injected.

Names.—I first named this micro-organism "micrococcus Pasteuri" in a paper published in the *American Journal of the Medical Sciences* in 1885 (July). This name has generally been adopted in this country, and is used by recent English and French authors, but the German authors have not accepted it. Thus Flugge briefly describes it under the name "bacillus septicus sputigenus (Fränkel)," thus ignoring all the work which had been done upon it prior to the time that Fränkel commenced his researches. Biondi,[11] following Flugge's classification, calls it "bacillus salivarius septicus." Fränkel speaks of it as the "micrococcus of sputum septicæmia," or as the "lancet-shaped pneumonia coccus." Weichselbaum and other German authors frequently speak of it as "Fränkel's pneumonia coccus" or as the "diplococcus pneumoniæ." Gamaléia, recognising it as a streptococcus, as I had done previously,[12] calls it "streptococcus lanceolatus Pasteuri." I do not object to this modification of the name which I felt myself authorised to give to this much-named microbe in 1885, and which has all the rights of priority. but I do object to the designation "Fränkel's diplococcus" or "Fränkel's pneumonia coccus," which so many German writers have seen fit to apply to it. While I fully recognise the value of Fränkel's contributions to our knowledge with reference to its presence in pneumonia exudate &c., I must insist that Talamon deserves the credit of having first produced typical lobar pneumonia in rabbits by injecting this micrococcus through the thoracic walls. We have most positive evidence of this fact in the quotation already made from the work of Professor Germain Sée, published in Paris in 1885. If, therefore, it is anyone's pneumonia coccus, it is Talamon's. And in view of the fact that I discovered it in 1880, photographed it, and described its morphological characters in 1881, and made extended researches relating to its physiological characters, resistance to heat, to chemical agents, &c., in 1881 to 1883, I think I may properly object to its being called "Fränkel's diplococcus" or "Fränkel's micrococcus (or bacillus) of sputum septicæmia."

Having thus briefly reviewed the history of our knowledge with reference to this interesting micro-organism, and shown the nature of the evidence upon which it is claimed by several competent bacteriologists to be the infectious agent in acute pneumonia, I must leave the subject for further consideration and experimental investigation.

[11] Zeitschrift für Hygiene, Bd. xi., 1887, Heft 2, p. 194.

[12] See my paper in the Journal of the Royal Microscopical Society, June, 1886, p. 366.

"ACTÆA RACEMOSA" IN DISEASES OF NERVOUS ORIGIN.

BY J. CRAIG BALFOUR, L.R.C.P. & S. ED.

ALTHOUGH the present Pharmacopœia has retained this drug under its new name of "cimicifugin," yet its value as a therapeutic agent in diseases of nervous or rheumatic origin seems to be far from appreciated by most men in general practice; in fact, I have heard of one London physician making the statement that its use was now almost entirely confined to specialists. In mentioning it some years ago to a leading hospital physician, he, while admitting its value, complained of an uncertainty in its action, as he had found it fail where he expected the best results; but, having used it a good deal lately with success, I append a short statement of two or three cases, which may have the effect of inducing some to give it a trial where other remedies have failed.

The first is that of a rather nervously constituted and not very robust young lady, who had suffered for years from acute dysmenorrhœa. Menstruation had commenced at the age of twelve, and from the first was attended by great pain and discomfort. All the ordinary domestic remedies were tried without avail, and several physicians, both in London and elsewhere, were called in, without much relief being obtained; and, as one physician then attending the family said, after trying all the usual remedies unsuccessfully, that nothing more could be done, the patient had to resign herself to being confined to bed for a varying period each month, and to an amount of pain frequently so severe as to cause her to faint. Some years afterwards I accidentally became aware of her sufferings, and proposed that at least one more trial should be made, to see if it were really impossible to obtain relief. On inquiring about the symptoms, I arrived at the conclusion that the pain was mainly neuralgic (though perhaps partly due to congestion), and I therefore determined to try the actæa, which appears to have a special effect in cases where the uterus and its appendages are implicated. I ordered ten minims of the tincture of cimicifugin to be taken night and morning for a few days before the menses were expected to appear, and to be continued during the whole period. I also ordered the patient to lie down, and to apply hot fomentations or mustard poultices to the abdomen when the pain commenced. From the very beginning of the treatment she experienced great relief, and in a short time found that a dose or two at the commencement of each period sufficed, keeping her so free from pain that only on exceptional occasions was it necessary to lie down for a few hours, so that now the patient feels a different being, and is no longer haunted by the dread of each returning period. This is but one of several cases, but I have mentioned it on account of its severity and intractability under other treatment.

The next case is that of a middle-aged lady, who suffered from a severe spasmodic pain in the stomach. In conjunction with obstinate dyspepsia, she had acute spasmodic seizures recurring at intervals of a few weeks, and terminating in prolonged fainting fits, sometimes alarming in their severity, as she suffered from an extremely weak heart. She had consulted several physicians both in England and abroad, and by all the pain was said to be neuralgic, and not due to any disease of the stomach; nothing, however, could be relied on to give relief but a draught prescribed for her by one of her medical attendants, containing chloric ether, hydrocyanic acid, tincture of bella-

donna, and tincture of opium, and at times even this failed to have the desired effect. On account of the dyspepsia and the dread of eating anything she found apt to bring on an attack of the acute pain, she had for about six years subsisted mainly on toast, fish, and vegetables, and was able to take only very little of either at a time. Soon after her arrival in the city in which I was then practising, I was called in to attend her one night, when she had an unusually severe attack of the neuralgia in the stomach, which neither her draught nor mustard poultices seemed to have much effect in relieving. At that time I gave a small hypodermic injection of tartrate of morphine at the seat of the pain. This soon gave relief, and there was no immediate return of the spasm, but only an extreme soreness throughout the whole region. She was always very weak for a considerable time after an attack of this sort, and could take nothing but a little beef-tea. However, I determined to try to combat the dyspepsia, though with but faint hopes of succeeding where so many had failed. I relied mainly on giving the stomach as little work as possible, and for this purpose I ordered her teaspoonful doses of a mixture of one part lime-water and two parts milk, administered about every twenty minutes. This was continued for some days, when the quantity was gradually increased, and I allowed in addition a raw egg well beaten up with milk and a little sherry. She also very soon took a teaspoonful night and morning of the juice carefully scraped out of a piece of raw beef, leaving all the fibre behind, and given mixed with a little fine bread-crumbs, and a pinch of pepper and salt. This treatment I often prefer to artificially digested foods, as being generally more easily obtainable and less expensive; the natural repugnance to raw meat is, as a rule, easily overcome, if it be carefully prepared and covered with bread-crumbs. After a short course of this treatment the patient felt a great craving for more solid food, to which she was gradually allowed to return, when she discovered she could eat almost anything in moderation without suffering from it. She was, however, considerably troubled with acidity, which was generally relieved by taking a few drops of dilute nitro-hydrochloric acid in a little water before meals. For some time there had been no return of the severe spasmodic pain, but that it was not entirely gone we at last discovered. However, on its first return I ordered ten minims of the tincture of cimicifugin to be given every eight hours in a little water, and continued for a few days, to be recommenced whenever there was any return of the pain or feeling of discomfort. This treatment was so successful that she is now quite free from any return of the severe neuralgic spasm, feels much better, and can eat almost anything. This patient suffered from a uterine fibroid, with a tendency to prolapse, which may have something to do with the cause of the neuralgia and the success of the actæa treatment.

In another very interesting case the drug proved of the greatest service, the more so, perhaps, as in the country it is next to impossible to make use of electrical and other means of diagnosing and treating nervous cases, especially when the patient lives at a considerable distance. A few months ago I was sent for to see a little girl of twelve years old, residing about ten miles off, who was said to be very seriously ill. On arriving at my destination, I found it was simply a labourer's cottage, but unusually neat and tidy, and I noticed at once that the child's mother had a delicate and more refined look than is generally met with in people of her class. On making inquiries about the patient, I was told that up to about six months previous to my visit she had been in apparent health, and had never suffered from any particular trouble, till one day, when she complained of pain in one leg and arm, and of not feeling at all well. From this time onward she gradually became worse. She was at this period seen by a medical man, who treated her for neuralgia, but without much success. Living at some distance, he did not see her very often, and appears to have first stated that she was suffering from neuralgia, then from rheumatism, and finally that her spine was affected, and ordered complete rest. Ultimately, the parents, anxious to know if nothing further could be done, called me in to give my opinion on her case. The patient was lying on a sofa beside the fire, neatly and tastefully dressed; she was a pretty child, pale from long confinement, and with an anxious and frightened expression. On inquiring about her symptoms, I was informed that she complained of great pain in the legs and down the spine; there was also considerable tenderness over the abdomen. She could move her arms freely, but the legs only very slightly, and complained of pain in doing so, as well as acute pain when they were touched. She was apparently quite unable to walk or stand, did not sleep well, and complained of intense giddiness in the dark, and especially when left alone. I had her undressed, and examined the spine closely for any irregularity or trace of deformity, but found nothing, nor was there any specially painful spot; she seemed to have pain all over, and cried out if the back, legs, or abdomen were touched. After a thorough examination, I felt satisfied that the pain arose from no disease of the spine, but was probably a hysterical neuralgia. There was not much family history to be got, but both the patient's mother and grandmother suffered from severe nervous headaches, as did also an elder sister. I told the mother that I believed her to be curable, and agreed to begin the treatment at home; at the same time warning them that she might have to be sent to the hospital, so as to benefit by a change of surroundings. To begin with, I ordered ten-minim doses of tincture of cimicifugin to be given every six hours, and in addition ten grains of bromide of ammonium at bedtime, and an extra dose whenever the pain became violent. I saw her again in about two days, and found that she slept much better, and that there already seemed to be traces of improvement, but she complained of increased pain and tenderness over the abdomen, especially over the lower portion. In addition to going on with her medicine, I then ordered mustard poultices to be applied over the region of the ovaries, to be continued about twice a day for two days, taking care not to make them too strong or to injure the skin. This seemed to afford considerable relief, and she gradually improved till she could move about a little. The bromide was discontinued, as she no longer felt giddy when left in the dark. In about three weeks I ordered, in addition to the actæa, a small dose of Easton's syrup at meal-times, as she seemed to require a little iron. At the end of six weeks' treatment she could walk with the aid of a stick, and appeared to be almost entirely free from pain. She was then sent away for change of air, and all medicines were discontinued. On returning home in about three months' time, she appeared to be perfectly well, and suffering neither from pain, giddiness, nor sleeplessness, though still delicate-looking from her long confinement to the house. I have warned her mother that there may be a return of the pain at the commencement of the menses, but if so, I believe the actæa will again be successful in relieving it, as it has already converted her from helpless invalidism to a state of comparative health.

To these three cases, which were all severe ones and good tests of the efficacy of the drug, I may add one more. A lady, residing in London, who has had a large family, has, since the birth of her last child, suffered much from a severe neuralgic pain in the pubic region, which feels, she says, as if it were in the bones themselves. A few ten-drop doses of the tincture gave almost immediate relief.

Redbourne, Lincs.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

MIDDLESEX HOSPITAL.

FOUR CASES OF HYDATID CYSTS OF THE LIVER, WITH REMARKS.

(Under the care of Mr. HENRY MORRIS.)

OPINIONS differ as to the period in growth of a hydatid cyst most favourable for surgical interference. Erichsen[1] says that surgical interference should never be undertaken until the tumour reaches such a size as to become a source of inconvenience to the patient. Murchison[2] was of opinion that in all cases where a hydatid tumour is large enough to be recognised during life, and is increasing in size, it is

[1] Science and Art of Surgery, vol. ii., p. 908.
[2] Diseases of the Liver.

advisable to puncture at once. Fagge[3] was in favour of interference when the tumour is larger than a billiard-ball and increasing in size. Mr. Morris is also in favour of early operation, for which much may be said. If left, the cyst may burst, especially if unexpected strain be placed on its walls, and the percentage of deaths after rupture of hydatid cysts is very high. Dr. Cyr[4] gives the relative mortality from hydatids left to burst spontaneously as follows. When the contents escape into the peritoneum 90 per cent. are fatal; into the pleura, 80 per cent.; into the bile ducts, 70 per cent.; into the bronchial tubes, 57 per cent.; into the stomach, 40 per cent.; into the intestines, 16 per cent.; and through the abdominal walls, 10 per cent. Murchison mentions other directions in which the contents may escape, as into the pericardium and inferior vena cava, with fatal results. He also draws attention to the other ways in which a fatal result may ensue if the cyst is left: as by exhaustion, pressure upon important organs, suppuration or gangrene of the cyst, &c., or by the formation of secondary cysts. The question as to the method of operation is still to some extent unsettled, but the general opinion of the profession is in favour of tapping the cyst in the first instance; and in the discussion at the Clinical Society[5] several of the speakers mentioned instances in which this had been quite sufficient to effect a cure. Dr. Sennett[6] of Hamilton, Victoria, says that it is the general practice in Australia to completely empty the cyst; he had done this in 100 cases, with a mortality of 10 per cent. He considered it better to draw off a small quantity of the fluid and inject a corresponding amount of a weak solution of perchloride of mercury—two drachms of a solution of two grains to the pint. The results obtained by this method were most satisfactory. On this point we may quote Greig Smith.[7] "In an ordinary case of slow growth the first treatment would probably be to tap the cyst and wait for the result. If the cyst refills and goes on increasing, and more particularly if signs of suppuration appear, some plan of opening and emptying it must be employed." Fagge says: "The withdrawal of a very small part of the fluid contained in a hydatid, by means of a fine trocar, is often sufficient to destroy the parasite, and to set up a process which will ultimately lead to the disappearance of the tumour. To do more than this is generally useless, and to exert forcible suction upon a cyst surrounded on all sides by the resistant tissue of a solid organ must involve some risk of setting up inflammation." He does not counsel a second operation within twelve months unless there be reason to suspect suppuration within the capsule.[8] Bristowe recommends the employment of a fine trocar and cannula, removal of some of the contents, followed by perfect rest and steady pressure on the part. Other substances than perchloride of mercury have been injected into these cysts, such as iodine solutions; but it is found in England that simple withdrawal of a quantity of fluid without injection is often sufficient. For the report of these cases, of which we publish two this week, we are indebted to Mr. W. Roger Williams, surgical registrar.

CASE 1. *Aspiration, followed by incision and drainage; recurrence three years afterwards; incision and drainage repeated; recovery.*—The patient, a well-nourished, dark-complexioned, healthy-looking woman, aged twenty-one, was admitted on Jan. 15th, 1885. She complained of dragging pain at the epigastric region and nausea. She stated that she first noticed a lump the size of an apple at the front of the abdomen on the right side, just below the middle of the costal margin two years and three-quarters previously. A few months later she became pregnant, and noticed nothing further of the tumour until after delivery, about a year before admission, when it was larger. Of late she had been subject to pain in the region of the tumour and nausea. Her previous health had been good; at about puberty she was subject to abscesses and enlarged glands of the neck. There was no history of jaundice or colic. She was born at Cirencester in Gloucestershire. Her mother died of phthisis, and was of a phthisical family.

On examination of the front of the abdomen, there was marked fulness on the right side, at and above the level of the umbilicus. On palpation, a circumscribed fluctuating tumour the size of a fœtal head was felt occupying this region; it was dull over its most projecting part—i.e., between the umbilicus and the tip of the tenth (right) rib, and this dulness was continuous with that of the liver. The tumour moved with the diaphragm in forced respiration. Just above the umbilicus there was a deficiency in the linea alba between the recti muscles, into which the tip of the middle finger could be inserted.

On Jan. 22nd the swelling was aspirated at a point midway between the umbilicus and the tip of the tenth rib on the right side, and eighteen ounces of clear pale fluid were evacuated, which contained chlorides, but no albumen. On the 30th the tumour, having refilled, was again tapped, and nineteen ounces of slightly turbid yellow fluid, with scolices and abundant albumen, were withdrawn. The tumour having almost entirely disappeared, the patient left the hospital on Feb. 23rd, feeling quite well.

On April 7th she was readmitted with a return of the tumour, which was now as large as before aspiration. It was aspirated on April 9th, when sixteen ounces of an orange-coloured fluid, loaded with albumen and bile pigments, were withdrawn. Soon afterwards reaccumulation commenced, and so on June 3rd a vertical incision two inches long was made through the right linea semilunaris over the most prominent part of the tumour. There were some adhesions at the inner side of the wound, between the parietal peritoneum and the cyst wall. The cyst thus exposed was first punctured with a large trocar and cannula, and then laid open. Sixteen ounces of bile-stained fluid were evacuated, with numerous small daughter cysts, containing hooklets. The cut edges of the cyst were then sutured to the margins of the abdominal wound by continuous silk suture, and a large indiarubber drainage tube was inserted. The dressing consisted of lint soaked in terebene oil; carbolic acid solution was used for the hands and instruments, and the carbolic spray was employed during the operation. There was hardly any hæmorrhage. The patient retched and vomited much during the operation, and for forty-eight hours afterwards. The temperature became normal on the seventh day after the operation, and continued so. The cyst wall and several daughter cysts having been shed through the wound, she made a rapid recovery.

The patient remained well and able to perform her domestic duties for two years after this operation. Then she became subject to abdominal pain, with occasional hæmatemesis, and a fresh swelling formed in the hepatic region. She suffered in this way for nearly a year.

On June 1st, 1888, she was readmitted, complaining of pain and tenderness at the upper part of the abdomen. It was then found that a very large smooth, firm, fluctuating swelling occupied nearly the whole of the upper part of the front of the abdomen, above the level of the umbilicus. The scar of the former operation was quite sound. On the 6th a vertical incision three inches long was made through the middle of the upper part of the right rectus muscle, &c., beginning above at the costal arch. The peritoneum having been exposed, a large trocar and cannula was introduced through it into the cyst. In this way about 120 ounces of clear pale fluid were evacuated, without any of it escaping into the peritoneal cavity. The cyst wall was then incised, its edges stitched to the parietal peritoneum, and these to the skin at the margins of the wound. The cystic cavity was single, and there were no daughter cysts. Three large indiarubber drainage tubes were inserted into it. The wound was dressed with iodoform wool. Rather free suppuration followed; and it was a month before the temperature resumed the normal range. She left the hospital a month later with a discharging sinus at the seat of the operation wound. She was seen about four months later, when the sinus was still discharging; a silk ligature was then extracted from it, and it healed in three or four days afterwards.

CASE 2. *Incision and drainage; recurrence two years and a quarter afterwards; incision and drainage repeated; recovery.*—The patient, a married woman, aged thirty-six, was admitted on July 31st, 1885, with a firm circumscribed tumour about the size of an orange, which occupied the left hypochondriac and epigastric regions. It moved with the diaphragm in forced respiration, and a portion of it was generally dull on percussion. This, however, was so hard that it was taken by several, including Dr. Landaw, of

[3] Fagge, vol. ii., p. 555.
[4] Traité Pratique des Maladies du Foie, 1887. Annual of the Universal Medical Sciences, vol. i., p. 331.
[5] THE LANCET, vol. ii. 1887, p. 1220.
[6] Ibid., vol. i. 1887, p. 1229. [7] Abdominal Surgery, p. 520.
[8] Op. cit., p. 556.

Berlin, to be a fibrous tumour. The tumour was first noticed five years previously, when it was smaller than on admission. During the three months before admission she had been subject to pain and tenderness in the region of the tumour.

On Sept. 9th laparotomy was performed by making an incision three inches long through the linea alba, between the tip of the xiphoid and the umbilicus. Subsequently this incision had to be prolonged downwards to an inch below the umbilicus. A thick-walled hydatid cyst, the size of a small orange, was thus exposed in the under surface of the left lobe of the liver, to which the omentum and transverse colon were adherent. On laying the cyst open no fluid escaped; but there were numerous daughter cysts, which were so tightly packed within that they had to be removed with a teaspoon; they varied in size from a walnut to a pea, and smaller. Another large cyst, connected with the posterior part of the liver, could now be felt, which came into close contact with the deep part of the superficial cyst, through which an opening was made into it, but it could not be satisfactorily evacuated. The edges of the cyst were stitched to those of the wound, and a large indiarubber drainage tube was introduced. The abdominal wound was closed by superficial and deep sutures in the usual way, antiseptic dressing and treatment of the wound being observed throughout.

During the first week after the operation numerous sloughing daughter cysts came away. It was another week before the temperature resumed its normal range. Subsequently convalescence was rapid and uninterrupted. She left the hospital in fairly good health on Nov. 23rd, with a small sinus where the drainage tube had been.

She was readmitted on Jan. 1st, 1888, with a fresh abdominal tumour the size of a man's fist, situated more to the left than to the right of the scar of the previous operation. The old sinus continued to discharge slightly until three months previously; since this time it had been closed. She had noticed gradual formation of the present abdominal tumour during the last year. On Feb. 1st the tumour was tapped with trocar and cannula and clear hydatid fluid evacuated. On Feb. 20th laparotomy was performed through the scar of the old operation. The cyst was found to be unconnected with the liver and surrounded by the adherent omentum and colon. After it had been completely separated from adhesions it was removed. This operation was followed by hardly any febrile reaction. The patient left convalescent on March 13th with a discharging sinus. When last seen, a few months after the operation, this sinus had quite closed.

SEAMEN'S HOSPITAL, GREENWICH.

PNEUMOTHORAX AND HYDRO-PNEUMOTHORAX FOLLOWING FRACTURE OF THE RIBS; REMARKS.

(Under the care of Mr. G. R. TURNER.)

THIS condition, which consists in the presence of air in the pleura, whether it be accompanied by hæmatothorax or followed by pleurisy, is much less common than is generally believed in the profession, especially when associated with fracture of the ribs; it may follow on laceration of the lung either as a primary or secondary result, even when there is no external wound. The wound of a lung which is caused by fractured ribs frequently leads to the passage of air into the cellular tissue outside the chest wall. Emphysema is not infrequent, and indicates that both layers of the pleura are torn through; yet it is unusual to find clinical accounts of cases of pneumothorax. West,[1] in his Bradshaw Lecture on Pneumothorax, drew attention to this. At an earlier date he had asked the opinion of surgeons on the subject,[2] without obtaining a definite answer to his question, the majority of speakers quoting cases in which it had followed rupture of the lung. His explanation was that the lungs must become hitched on the protruding and jagged edges of the bones, and are in this way prevented from collapsing. The amount of pressure required to overcome the "cohesion" of the pleural surfaces was shown to be very considerable. We had hoped to find in the reports of our large hospitals some statistics bearing on the subject and extending over a series of years, so as to decide the question to a certain extent. Some hospitals, however, ceased to issue reports during the period selected. Some only commenced to publish them; and of two available, the one divides fractures of the ribs into those without and those with wound of the lung, not giving the variety of complications which ensued and proved the presence of lung wound; the other[3] is, however, much more full, giving for each year the complication and extent of injury. The number of cases admitted during the time was 237 of both sexes, with twenty-eight deaths; in twenty-five of these emphysema was developed; in twenty-eight hæmoptysis followed; but in only four, and those fatal, was pneumothorax found; then it was accompanied in every instance by hæmatothorax, in three by emphysema, and later by pleurisy in one of these. All of them were the subjects of severe injuries, not in each instance confined to the thorax.

Robert B——, aged seventeen, was crushed between the pole of a cart and a wall. On admission (May 3rd, 1888) he was pale, cold, clammy, and extremely collapsed. The fifth, sixth, and seventh ribs of the left side were fractured near their sternal extremities. There was some slight emphysema over the seat of fracture, and hæmoptysis. He vomited blood in the evening (hæmatemesis, probably due to swallowing blood, as there was no sign of abdominal injury). He recovered from his collapsed condition under the influence of warmth and stimulant, and his temperature, which had been subnormal, rose to 99° on the evening of May 4th. His emphysema was then more marked, and the expansion of the chest on the left side markedly less than on the right. The following day the left side of the chest was almost motionless. There was increased resonance and loss of vibration and of breath sounds on this side. The apex beat of his heart was below and internal to the right nipple. His breathing was exaggerated on the right side. The temperature rose to 101·4° in the evening. There was no evidence of pneumonia. The boy, in spite of the pneumothorax and displacement of the heart, seemed fairly well in himself. The subcutaneous emphysema had disappeared in two more days, the temperature regained the normal, and all hæmoptysis and cough had ceased. The pneumothorax, however, persisted, and his apex beat was directly under the right nipple on May 10th. From this time it became less, the heart gradually regaining its position, so that on May 14th the apex beat was two inches to the left of the right nipple, on the 18th about the ensiform appendix, and by the 21st in its normal situation. As the pneumothorax subsided, fluid began to collect in the left pleural cavity, the result of a pleurisy, attended with very few symptoms and but little pain or distress. On June 1st the dulness extended behind as high as the angle of the scapula. The effusion was rapidly absorbed, and on June 19th the patient left the hospital. When last seen, little if any difference in the breathing or resonance of the two sides of the chest could be detected.

Remarks.—Cases of pneumothorax and hydro-pneumothorax are comparatively rare, seeing how common an injury is fracture of the ribs, and how common the complication of emphysema and hæmoptysis, showing that the lung has been injured. It may be that in some instances pneumothorax escapes notice owing to the chest being enveloped in rib-roller bandages, and that when these are removed the pneumothorax has disappeared. In the case related both the emphysema was increased and the pneumothorax developed by the patient's straining whilst vomiting.

[1] THE LANCET, vol. ii. 1887, p. 355.
[2] Clinical Society, THE LANCET, vol. i. 1887, p. 575.
[3] St. Thomas's Hospital Reports, 1877-87, inclusive.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Annual General Meeting.—President's Address.

THE annual general meeting of this Society was held on Friday, March 1st, Sir Edward H. Sieveking, President, in the chair. Dr. de Havilland Hall and Mr. Cowell were appointed scrutineers of the ballot.

Dr. CHEADLE read the report of the President and Council, which showed the maintenance of a condition of financial prosperity and scientific activity. The proceedings had been posted to each Fellow desirous of receiving them immediately after each meeting, thus rendering them of

more use and interest. The number of Fellows at the present time reached a total of 769. There was a balance in favour of the Society of £373 2*s.* 3*d.*

The Honorary Librarians reported that 578 volumes had been added to the library during the past year, exclusive of Transactions and periodical publications. The total number of volumes now in the library was 31,320; 3883 books were borrowed during the year, and 56 new portraits of medical men had been added to the Society's collection. The Marshall Hall Prize was awarded by a committee of the Council to Dr. W. H. Gaskell, F.R.S., Lecturer in Advanced Physiology in the University of Cambridge, in consideration of his valuable researches in connexion with the nervous system carried out during the past five years. Dr. Gaskell, at the invitation of the Council, delivered an address during the session, describing some of his investigations and their results.

The report of the Council was adopted on the motion of Dr. BARNES, seconded by Dr. THEODORE WILLIAMS.

It was carried, on the motion of Dr. C. J. HARE, that the composition fee for the Transactions, payable by non-resident Fellows, be raised to eight guineas.

The PRESIDENT then delivered his annual address. After thanking the Fellows for the honour done him in electing him president, he referred to the probable change of the habitat of the Society, which had already engaged the serious attention of the Council, and which would be brought under the notice of the Fellows on March 4th. He then alluded, as was customary, to the losses the Society had sustained during the past year by the sickle of the universal reaper. Mr. Thomas Blizard Curling had been fifty-one years a Fellow, and had filled in succession all the posts of office. It was interesting to record that he was one of the first batch of Fellows of the College of Surgeons elected in 1843 under the new constitution, and of his works one had been translated into Chinese. The Society also lost by death during its summer session Dr. Nicholas Parker, formerly physician to the London Hospital, Dr. Christopher Thomas Richardson of Ramsgate, Mr. Walter J. Bryant of Reading, Dr. Thomas Harrington Tuke, and Dr. George Thompson Gream, the latter being formerly physician-accoucheur to the Princess of Wales. In the latter half of the session there had died Dr. Edward Headlam Greenhow (who had worked as a valuable coadjutor with Sir John Simon, and had contributed to professional literature valuable researches concerning the prevalence of lung disease in certain trades, observations on Addison's disease, and other subjects), Dr. Benjamin Mallam, Dr. George Duff, Dr. William Oliver Chalk, Dr. Benjamin Ridge, and Dr. Samuel Hill. Sir Edward Sieveking then referred to the award of the Marshall Hall prize to Dr. Gaskell, the two former recipients being Dr. Hughlings Jackson and Dr. David Ferrier. The library was becoming year by year more cramped for space, and yet in certain departments—as, for instance, in those of climatology and balneology—it was very deficient. This consideration was inducing the Council to seek a more roomy and more accessible home. The question had now assumed a more tangible form, and he trusted that any conclusion arrived at would redound to the advancement of the high objects the founders of the Society had in view. In older days much good work had been done by committees of the Society—such as by those on suspended animation, diphtheria, &c.,—and he thought their re-establishment would be useful and lead to good results. In many of the larger questions raised in medicine, surgery, and midwifery, the speakers had not usually all been on one side, and the value of a committee in such instances was that it marked the precise state of our knowledge at the time. He thought that the subjects of climatology and balneology, with especial reference to the health resorts of our own country, could well be investigated by a committee, whilst others could be engaged on bacteria and bacilli, syphilis, and a critical review of the subject of suspended animation.

Dr. BOWES proposed, and Dr. MAPOTHER seconded, a vote of thanks to the President for his address.

Thanks were also voted to the retiring vice-presidents—Sir Andrew Clark, Dr. Andrew, Sir Henry Thompson, and Mr. Smith; to the retiring members of Council—Dr. Cayley, Sir Joseph Fayrer, Dr. Powell, Dr. Sansom, and Mr. Butlin; and to the retiring secretary, Dr. Cheadle.

The following officers were elected for the ensuing year:—President: Sir Edward Henry Sieveking, M.D. Vice-Presidents: Drs. Robert Barnes and Octavius Sturges; Messrs. W. Morrant Baker and Christopher Heath. Treasurers: Dr. C. J. Hare and Mr. J. Ashton Bostock. Honorary Secretaries: Dr. Frederick Taylor and Mr. J. Warrington Haward. Honorary Librarians: Dr. Jones Gee and Mr. J. Whitaker Hulke. Other members of Council: Drs. T. Lauder Brunton, J. Hughlings Jackson, W. Miller Ord, A. Julius Pollock, and C. H. Ralfe; Messrs. Howard Marsh, Henry Morris, R. W. Parker, Edward Tegart, and W. Johnson Walsham.

PATHOLOGICAL SOCIETY OF LONDON.

Pseudo-hypertrophic Paralysis.—Perforating Ulcer of Foot.—Congenital Growth of Larynx.—Cranial Osteoporosis.—Cysts of Genital Gland and Urachus.—Syphilitic Tracheitis.

A GENERAL MEETING of this Society was held on March 5th for the purpose of confirming certain resolutions of the Council concerning the amount of composition fees to be paid for life membership by the older members. Dr. Quain, who moved that the propositions of the Council be adopted, trusted that the Society would see its way towards commencing the formation of a collection of rare and valuable pathological books. Referring to the probable change of habitat of the Society which would result from the removal of the Royal Medical and Chirurgical Society from its present quarters, he thought that this disturbance should be taken advantage of in order to form a great British Academy of Medicine worthy of the name.

The ordinary meeting of the Society was then commenced, Dr. Dickinson, President, being in the chair.

Dr. HENRY HANDFORD described a case of Pseudo-hypertrophic Paralysis, which occurred in a boy aged eighteen, who had been under his care for the past eight years. He was only able to make an incomplete necropsy, the brain not being examined. The voluntary muscles were almost entirely converted into fat. There was no rigor mortis, although the necropsy was made fourteen hours after death. The heart showed fatty infiltration of both right and left ventricles, and the diaphragm was apparently entirely tendinous. No disease of the unstriped muscular apparatus could be detected. The cord showed change in the intermediate grey substance; the ganglion cells in the anterior horn appeared mostly normal; the grey matter was unequal on the two sides, and the want of symmetry in places was striking; there was a patch of softening in the right grey matter in the lumbar region. The affection was chronic, and therefore no interstitial neuritis was seen, though some axis cylinders had disappeared, and there was proliferation of the nuclei of the neurilemma. According to the Wallerian law, so long as motor fibres were connected with the anterior horn and the muscle; they should not degenerate, but this law probably held good only for a limited time. He had noticed tenderness of the muscles in these cases, and this perhaps indicated that the disease was a true myositis.—Dr. QUAIN expressed the opinion that the primary change was in the nervous system, and that the fat was simply the result of muscular inactivity.—Dr. DICKINSON was interested in the observations about the anterior horns; the disease was intimately and inseparably connected with infantile paralysis, and he considered that one would have to look ultimately to the anterior horns for the prime source of the lesion.—Dr. MOTT asked if the softening were found in any other region than the lumbar, and was the softening associated with the muscular paralysis.—Dr. HANDFORD had only found the one patch of softening, and he did not attribute the muscular atrophy to it. He regarded it as an epi-phenomenon, and Gowers and Lockhart Clarke had both observed a similar softening.

The Morbid Growths Committee reported on Dr. Handford's specimen of Carcinomatous Growth of the Bronchus. They agreed with the author that the case was one of primary carcinoma springing from the bronchus, though the appearance was not unlike a primary œsophageal growth which had penetrated the air passage; the œsophagus, however, was normal.

Mr. MARMADUKE SHEILD showed the Anterior Half of a Foot with a Perforating Ulcer and extensive Sinuses in the Sole. The bones were not carious, nor were the plantar nerves diseased, but the epidermis of the sole was hard, corneous, and leather-like in both feet. The specimen was removed by amputation from a man aged fifty. He had

been a free drinker and had suffered from syphilis. The integument of the palms was also thickened and diseased, chronic albuminuria and pulmonary emphysema being present. The pupils of this patient acted to light; the knee-jerks, though feeble, were not entirely lost; sensation in both feet was dull. Incipient ataxy was suspected in that the patient had a marked sense of insecurity in the dark, was subject to attacks of burning pain in both limbs, and had led the kind of life conducive to the production of chronic nerve disorders. Attention was drawn to the different kinds of cases of ulceration of the foot, and the opinion of members present sought as to the relation between nerve lesions and diseases and the kind of ulcer present.

Mr. LENNOX BROWNE exhibited the Larynx of a Child aged three, who had been since birth the subject of neoplasm, which had blocked the glottis to such an extent as to threaten asphyxia. Intubation was attempted, but, causing hæmorrhage, tracheotomy was promptly performed. Active bleedings took place twenty-four hours later, and death occurred forty hours after the operation. The necropsy demonstrated that the first hæmorrhage had occurred from an abrasion of a growth on the right vocal cord by the intubation instrument, but that the later ones were due to the circumstance that the lungs had never been properly expanded, being no larger than those of a newly born infant, and that the tissue had given way under the suddenly increased volume of air afforded through the tracheotomy tube. The case was deemed interesting in presenting a hitherto unrecorded danger of tracheotomy in cases of congenital laryngeal obstruction, and also as pointing to a risk in performing intubation in cases of laryngeal growths. The growth was a true papilloma.

Mr. J. F. BRISCOE showed parts of a Skull found at Zanzibar affected with Osteoporosis. It was discovered on the island of Samoa, among a number of human and other skeletons which had been exposed on a sand-hill since 1805, at which date a battle occurred and 2000 people were supposed to have been slain. The specimen showed the greater part of the frontal and parietal bones, which were white and polished like porcelain. The fragments put together showed them to be from a child aged six; the bones were considerably thickened, particularly over the frontal and parietal eminences, and here the bone was very vascular and five-eighths of an inch thick. The cancellous tissue was well marked, and quite different from the usual calvaria seen in museums. New cancellous tissue of a columnar appearance was distinctly superimposed on the old bone, and the difference in the direction of the cancelli was well shown; the sutures were obliterated, and there was a want of uniformity about the skull differing from osteitis deformans; it was unlike the usual specimens styled osteoporosis, and the diagnosis rested between syphilis and rickets; the latter, he believed, was uncommon amongst savage races in their native state. Zanzibar was conquered in 1784, and it was interesting with regard to this specimen if the case turned out to be one of syphilis.—Mr. BLAND SUTTON said that two or three members of the Society, whose opinion was entitled to respect, held that these thickened skulls might be regarded as the result of a mixture of congenital syphilis and rickets. There was no good evidence to warrant such an opinion, for all the conditions existing in these skulls occurred in rickety mammals, and as yet syphilis had never been noted in any animal other than man, not even in monkeys. The specimen shown by Dr. Briscoe was of great interest and belonged to a rickety child. The specimen most nearly corresponding to it was the famous Jadelot skull, which belonged to a child about six years old. Many of these skulls were loosely labelled osteoporosis, but there was no such disease; this might be urged on the following grounds. In progressive cases of rickets, when the disease was very severe, so as to bring about thickening of the skull, the bones softened, due to a very large proportion of osteogenetic tissue not yet converted into bone; in such cases the membrane-formed bones of the skull cut like cartilage. When the individual recovered, the osteogenetic tissue became bone, and as hard as a billiard ball, the thickening being restricted to the bones pre-formed in membrane. Should death occur and the skull be macerated, the soft animal tissue macerated away and left honeycomb-like spaces; subsequently the bone was set up in a museum as an example of osteoporosis. His opinion was that Dr. Briscoe's specimen was from a young child which had severe rickets; it died during the progressive stage of the disease, and the soft matter had been removed by decay. Mr. Sutton illustrated his observations by numerous specimens.—Mr. SHATTOCK could corroborate all that Mr. Sutton had stated. In St. Thomas's Hospital they had recently acquired a specimen much like that shown; there was no history of syphilis. In rickets the whole of the bone was affected, but in syphilis the osteoplastic formation was less diffused and tended rather to form localised nodes.—Dr. QUAIN gave the history of a specimen which was brought into the dissecting-room at University College; the skull was much like that shown, and the history was that the woman never had a headache and was not deficient in intellect.—Mr. EVE said that the skulls described as rickety by John Hunter in the College of Surgeons museum very closely resembled other specimens labelled osteoporosis in that collection. The same change as that described in the skull was also found in the long bones.—Dr. DICKINSON proposed that the skull should be examined by a committee consisting of Messrs. Sutton, Shattock, Eve, and Briscoe.—Mr. EVE had tried in vain to inoculate monkeys with syphilis.

Mr. EVE showed a Cyst originating in the retained and undeveloped Testis of a Hermaphrodite Sheep. It lay in the pelvis, was four inches in diameter, and contained fat. No epithelial lining existed, but an impervious vas deferens passed upwards to it and was lost on its surface. The specimen was interesting as indicating the nature of some congenital cysts of the testicle. Mr. Eve also showed a similar Cyst attached to the Apex of the Bladder of an Ox; it evidently originated in the urachus. It likewise contained fatty matter, and had no epithelial lining. Seven such cases had been published in Germany. He commented on the mode of formation of fat in these cysts, which had no epithelial lining. Mr. Eve exhibited a third specimen of an Atrophic Scirrhus of the Breast, in which the lymphatics had been injected. The injection passed from the lymphatics into the alveoli of the growth and into the lymphatics of the skin, to which the tumour was adherent. The specimen demonstrated the direct communication between the connective-tissue interspaces containing the cancerous growth and the cutaneous lymphatics. The growth had existed four years, and was obtained from a woman aged seventy-four.—Mr. SUTTON said that cysts of the urachus of the pig were common, and in children and adults they would be oftener found if more frequently looked for. Mr. Lawson Tait had given him the opportunity of examining several of these cases, which were lined with epithelium resembling that of the bladder.

Dr. GULLIVER showed a case of Syphilitic Ulceration of the Trachea and Large Bronchi, which was found in a woman aged thirty-eight. The larynx and upper part of the trachea were healthy, but one inch and a half above its bifurcation ulceration commenced, extending for an inch into the large bronchi. The mucous membrane had been eaten away, and the cartilages laid bare. Resulting contraction had produced constriction of the bronchi. There was extensive typical ulceration of the soft palate of syphilitic character. The patient died of broncho-pneumonia and pleurisy, and stridor was a prominent clinical symptom.—Dr. PENROSE inquired if tubercle bacilli had been looked for, and if the diagnosis of syphilis had been established microscopically.—Dr. QUAIN asked if the stridor was not produced by reflex nervous irritation from the enlarged bronchial glands.—Dr. GULLIVER replied that he had not suspected tubercle, and that the physical narrowing of the bronchi was sufficient to produce stridor.

The following card specimens were shown:—

Mr. EVE: Atrophic Scirrhus of Breast.

Dr. W. HENRY WHITE: Rupture of Heart.

Mr. SHATTOCK: Cyst Formation in Contracted Kidney.

Dr. MOTT: Vermiform Appendix of unusual length.

MEDICAL SOCIETY OF LONDON.

Annual General Meeting.—Treatment of confirmed Catheter Life.—Traumatic Cerebral Abscess.

The annual general meeting of this Society was held on March 4th, the retiring President, Sir William MacCormac, being in the chair. The annual report of the Council as to the state of the Society was read and received, as were also similar statements from the honorary librarian and treasurer, the latter showing that the financial condition of the Society was satisfactory. The subject of the essay for the Fothergillian gold medal for 1891 was announced as follows: "The

Temporary or Permanent Mental Derangements which follow Surgical Procedures."

The following gentlemen were elected to serve as officers during the ensuing session. President: C. T. Williams, M.D. Vice-Presidents: Dr. Gowers, Mr. Edmund Owen, Dr. Gilbart Smith, and Mr. J. Astley Bloxam. Treasurer: Mr. Durham. Librarian: Dr. Allchin. Hon. Secretaries: Dr. Beevor and Mr. Ballance. Secretary for Foreign Correspondence: Dr. Semon. Council: Drs. Fletcher Beach, Hadden, John Lowe, C. D. F. Phillips, Amand Routh, Seymour Taylor, Samuel West, and T. O. Wood; Messrs. H. W. Allingham, James Black, Bruce Clark, J. H. Drew, A. Doran, Francis Fox, Adams Frost, J. Hutchinson, C. B. Lockwood, Bernard Pitts, William Rose, and Sir W. Mac Cormac.

The ordinary meeting of the Society was then proceeded with, and a paper was read by Mr. WHITEHEAD, of Manchester, on the Treatment of Confirmed "Catheter Life" by a Permanent Perineal Opening. His plan he had found to be very effectual, and he believed it to be novel as applied to the advanced stages of prostatic obstruction. After briefly reviewing the more recent methods of surgical procedure in these cases, he stated that the operative part of his plan of treatment differed in no material respect from that of an ordinary median urethrotomy. The originality commenced with the after-treatment, when, through the opening made into the membranous urethra, he retained an indiarubber tube until a sufficient time had elapsed for the fistulous communication with the bladder to become cicatrised. After this the tube was no longer worn continuously; but the patient or his attendant was instructed regularly to withdraw, for an indefinite time, the urine through the fistula by means of a catheter. When cystitis coexisted with enlarged prostate, he recommended that advantage should be taken of each extraction of urine to give the bladder suitable medical irrigation before withdrawing the catheter. Mr. Whitehead mentioned cases illustrating the success of this treatment, and amongst them that of a gentleman now seventy years of age, upon whom he operated in 1884, when there had been symptoms of enlarged prostate, accompanied with cystitis, for ten years previously. The operation was perfectly successful, and the patient, who was incapacitated from business before the operation, had been able to attend regularly ever since, although he continued to withdraw his urine (now quite normal) through the perineal opening. The advantages claimed for this plan of treatment were that the bladder could at pleasure be completely relieved of its contents, it provided a permanent channel through which a perfect could be substituted for an imperfect system of washing out the bladder, and caused six inches of the most sensitive part of the urethra to escape the irritation produced by the passing of a catheter in the ordinary manner. He further contended that, by the maintenance of the permanent perineal opening, the relapses, which almost invariably took place when the aperture was allowed to close, were entirely avoided; and further, that by this means all the inconveniences attending enlarged prostate were permanently arrested without the risks being incurred of a really serious operation. Mr. Whitehead concluded by stating that what he advocated was, perhaps, only a small advance in the direction of what had been practised before; nevertheless, small as it was, it was sufficient to secure advantages which had never been hitherto within the resources of surgery, and that he was under the impression that the cases he had cited were the first on record where bladders had ever been approached through the perineum with the deliberate intention of keeping the openings permanent for the purpose of relieving the pain and misery of enlarged prostates.—The PRESIDENT asked if the patients were not still liable to difficulty of urination when the obstruction was valvular. The direct approach to the bladder would certainly relieve many of the distressing symptoms. Dr. Hunter Maguire, of Charleston, South Carolina, had placed on record at the last congress of American surgeons a number of cases where the distressing symptoms of enlarged prostate had been relieved by supra-pubic drainage, an oblique opening being made with its outer orifice at the level of the summit of the bladder.—Mr. BUCKSTON BROWNE said that an operation such as had been described had been performed for many years, and a permanent opening had also in some cases been intentionally left. The perineal incision had been spoken of as being almost harmless, but he had seen septicæmia, hæmorrhage, and even death follow this procedure. Fistulæ commonly resulted from this central incision, and they were most difficult to heal. The supra-pubic incision answered equally well, was almost devoid of risk, and good drainage could be obtained from it.—Mr. B. PITTS had done perineal urethrotomy in two cases of enlarged prostate, and both died within a few weeks of exhaustion. One advantage of the supra-pubic operation was that it enabled a more radical measure to be done if necessary; it certainly was the best in cases of vesical tumour.—Mr. WHITEHEAD replied that the prostate was often a mysterious body, symptoms sometimes being present where it was normal or even smaller than usual. He had done the perineal operation two or three hundred times, and only once had he met with an intractable fistula as the result. In the supra-pubic opening an instrument had to be continually kept in the latter, simply serving as an overflow pipe, which could not readily be controlled; but the perineal opening required no instrument to be constantly worn, and the patients had no difficulty in holding their urine for four or five hours; it could be drawn off with a short tube when necessary.

Mr. J. H. MORGAN then related a case of Compound Comminuted Fracture of the Skull, with an abscess in the motor area of the brain, treated by operation, and leading to a successful result. It occurred in a boy aged nine years and a half, in full health and vigour (he was exhibited to the Society), who in June last was admitted into Charing-cross Hospital in a state of insensibility, after falling into the mud of the Thames from off the Embankment and striking his head in the descent against a piece of timber, from which several wooden pegs projected. A scalp wound at the apex of the right parietal region exposed a small portion of bone, but no fissure could be seen. For the first four days the symptoms were those following severe concussion, but then a fit occurred which left paralysis of the left arm and leg, but no other part. On stripping off the scalp, a piece of bone was found driven into the brain at a distance of one inch and a half from the original scalp wound. This was elevated, and an abscess which existed in the region of the ascending parietal convolution was emptied, and its margins scraped. Power began to return in the arm on the second day after the operation, and in the leg on the third. Several fits occurred in the course of the next few days, in which the face, abdomen, and right extremities were affected; but these diminished in severity and subsided altogether by the fourth day, whilst the power of both arm and leg steadily increased. The granulations at one time seemed to threaten the occurrence of a hernia cerebri, but they shrank to a level with the scalp under the free use of iodoform. The boy was now perfectly well, and there was no sign of weakness in the arm or leg. The case presented points of interest in the distance of the depressed bone from the wound in the scalp, in the freedom with which the abscess in the brain was successfully treated, and the yielding of the exuberant granulations to a powerful antiseptic, as well as the occurrence of signs of a general cerebritis at a time when rapid repair was taking place in the parts primarily injured.—Sir WILLIAM MAC CORMAC remarked that the suppuration seemed to have been limited, instead of spreading from the focus of trouble. It appeared to him that scraping the cavity of a cerebral abscess involved some danger.—Dr. BEEVOR thought that all cases which confirmed the theories of cerebral localisation, as indicated by Ferrier in the monkey's brain, were of value. From the position of the abscess the leg ought to have been more affected than the arm. In the motor area of the orang-outang the centres for the different members of the limb were found to be arranged singly. He thought the fits were due to meningitis.—Mr. MORGAN, in reply, said it could not be made out whether the arm or the leg were the more affected; return of power commenced in the leg. The passing spasms, he thought, were due to cerebritis, as no other symptoms of meningitis were present. The abscess contents were foul, and therefore he removed the unhealthy granulations.

HARVEIAN SOCIETY.

AN ordinary meeting of this Society was held on Feb. 14th, the President (Dr. Buzzard) in the chair.

Some Arterial Murmurs.—Dr. SIDNEY PHILLIPS said that the murmur sometimes to be heard in the subclavian artery just below the clavicle was systolic in time, but sometimes

only heard during or much intensified by inspiration, and usually rough and abrupt in character. It was commoner in adult females than in males or children, and much more often heard on the left than the right side of the chest. Dr. Phillips looked upon it as an example of an ordinary hæmic murmur, as heard in other arteries, and produced by the same conditions, but heard usually below the clavicle only because the first part of the artery was within the thorax and not readily auscultated. These conditions were two—viz., insufficient filling and defective tonus of the arteries. The influence of respiration was attributed to the physiological result of the inspiratory enlargement of the chest, which decreased the blood-pressure in the large arteries; and the frequency of the murmur on the left side was due to the greater length of artery within the thorax on the left side of the body, exposing it more to the influence of the respiratory movements. In conditions other than anæmia, in which the murmur was heard, such as atheroma of vessels, debility of convalescence, &c., the factors were present as in anæmia to alter the relationship between the arterial calibre and its contained blood. The subclavian and pulmonary artery murmurs, which had been described as significant of *phthisis*, were in most cases the result of coexistent anæmia, the former being often heard on both sides of the body when one lung only was diseased, and, if in any case produced by phthisis, were the result not of consolidation of lung pressing upon the artery, but from impaired pulmonary expansion, leaving the artery unsupported. The murmurs in the aorta and pulmonary artery in anæmia were often influenced in rhythm by the respiratory movements; the aortic murmur being best or only heard during inspiration, while the pulmonary murmur was sometimes only heard during expiration. This difference was probably due to the different effect of inspiration on the blood-pressure in the systemic and pulmonary vessels, for in the former the blood-pressure was decreased, in the latter increased, during inspiration. Anæmic murmurs in the innominate and left common carotid trunks within the thorax were not infrequent in anæmia. The production of murmurs in the large vessels of the thorax from traction on these vessels by displacement of organs in sudden pleuritic effusion was exemplified by cases. Several patients were shown at the meeting to illustrate the points in the paper, and Dr. Phillips concluded that the murmurs in anæmia in the various arteries and conditions described were all to be accounted for by a defective relationship between the arterial calibre and the quantity of blood within it.—Mr. HILL called attention to the similar murmur heard in the abdominal aorta in various functional conditions. He mentioned one case, in which such a systolic murmur was heard so long only as there was great distension of the intestines by gas.—Dr. MAGUIRE thought the evidence brought forward insufficient to support the views maintained. It did not explain why murmurs should be heard only in certain arteries of the chest and not in others under apparently the same conditions. Similar murmurs were found where there was extreme atheroma of the arteries, and the arteries were therefore incapable of much alteration of calibre.—Dr. PHILLIPS, in reply, stated that in most of the cases he had described high arterial tension was found, and this was evidenced by examination both with the finger and the sphygmograph. The abdominal murmurs, he thought, were produced by a similar mechanism to that he had described as obtaining in the chest, and we must consequently be prepared for variations in the presence of the murmurs which may be inexplicable. The murmur found in atheromatous arteries was, he believed, caused by the artery being incapable of fitting itself to variations in the blood current.

Diphtheria, with Patches in the Perineal Region.—Mr. WILLIAM HILL read a paper on this subject, and remarked on the rarity of true diptheritic lesions in the perineum, and the still greater rarity of such lesions being antecedent to the throat affection, as in the two cases the subject of this communication. The outbreak was sporadic, and limited to the household of a gentleman of independent means, whose dwelling at Gosport was found to be in a very insanitary condition soon after occupation; amongst other defects the soil-pipe of the watercloset was untrapped. Of four persons using this closet, three caught diphtheria, and two of these three were first attacked in the perineum.—Dr. LANGMORE remarked upon diphtheritic and scarlatinal sore throats being, when well marked, occasionally quite painless and in danger of being overlooked.—The PRESIDENT had remarked that diphtheritic paralysis might exist in a considerable degree without much change in the electrical reactions. This was first noted by Duchenne; also he was sure the paralysis affected the sensory rather than the motor nerves. He had seen in one case primary diphtheria affecting other parts than the throat. He called attention to Trousseau's observations upon the infection of parts other than the throat during the progress of diphtheria.—Dr. PHILLIPS related a case where diphtheritic membrane formed over the site of a burn and appeared to be primary; also he had seen another case in which the gums were the first part to be attacked.

Reviews and Notices of Books.

The Anatomy of Labour, including that of Full-time Pregnancy and the First Days of the Puerperium, exhibited in Frozen Sections reproduced ad naturam. By A. H. F. BARBOUR, M.D. Eleven Plates, with Description. Edinburgh and London: W. & A. K. Johnston. 1889.

IN this work the author has collected all the representations of frozen sections, both from his own and others' works, which bear on the subject named in the title of his atlas. Plate I. includes the sections published up to 1887 by other observers, including Braune's and Waldeyer's sections from the last month of pregnancy, Schroeder's section from the first stage, Braune's and Chiara's sections from the second stage of normal labour, Chiara's section of spontaneous evolution, and lastly Stratz's section from a case of post-partum hæmorrhage. Then come the author's own subjects, including one from the beginning of the first stage of labour, cut in seven different planes, and four cases of uteri removed by Porro's operation; next we have Stratz's sections of uteri from the third stage of labour, one from a case of partial placenta prævia, and one from a case of eclampsia; then follow two sections of post-partum uteri; and lastly a section from a case which died five days and a half after delivery.

It would be impossible within our limits to give a summary of the conclusions to be drawn from this collection. A valuable contribution to our knowledge has been made in the series of plates from the subject named above, in which the course of the ureters is traced. As regards the lower uterine segment, the author has not included sections illustrative of the texture of this much-debated portion. It would seem, however, on comparing Plates II., V., and VI. with Plate X., Fig. 1, that (1) the lower uterine segment is part of the uterus, and not of the cervix; (2) that the coronary vein is situated considerably below the limit between the thick and thin part of the uterus; (3) that the coronary vein marks the os internum, the membranes being in no case attached below it. This atlas is a most acceptable contribution to the Anatomy of Labour, and the author deserves our best thanks for the energy which has enabled him to collect materials so valuable, and for the intelligence which has enabled him to utilise his material to such good purpose. In giving a little caution as to the conclusions to be drawn from materials of this description, we hope we shall not be understood to detract in any sense from what we have said above. In the first place, we want much more material before the disturbing element of individual peculiarities can be eliminated; in the second place, it would be highly unsafe to draw conclusions founded on the idea that such material necessarily represents the condition of things during life; for instance, were we to do so, we should be forced to conclude that the perineum in a living woman hangs half way down to the knees (see Plate I). All measurements of the mutual relation of parts must therefore be received with much caution. For similar reasons caution must be exercised in drawing conclusions from

uteri removed by so disturbing an operation as that of Porro. Where frozen sections agree with accurate clinical observation, their mutual confirmation is most valuable; where they differ, it is, in our opinion, for the frozen section to give way. The value of such work as the present, if utilised with these precautions, is very great. The execution of the plates is admirable.

A Handbook of Surface Anatomy and Landmarks. By BERTRAM C. A. WINDLE, M.A., M.D. Dub., Professor of Anatomy in the Queen's College, Birmingham. London: H. K. Lewis. 1888.

PROFESSOR WINDLE'S little treatise on Surface Anatomy and Landmarks is most thorough and systematic, and bears every mark of accurate observation. It must become a formidable competitor to Mr. Luther Holden's well-known book on the same subject, which is so great a favourite with teachers and students alike. A marked difference between them is at once seen. Professor Windle's work is more complete, and contains some valuable observations that are not included in Mr. Luther Holden's work, and, indeed, had not formerly the importance that is now given to them; but it merely states anatomical facts, and there is no attempt made at rivalling the interesting information and the aptness of illustrative detail with which Mr. Holden's book abounds. The chapters on the Scalp and Cranium, and their relations to the Brain, contain information which is more thorough and reliable than is to be found in any other text-book for students; but we question whether the relation of the skull to the brain is not more variable than is generally supposed and is accepted by the author on the authority of Dr. Reid's measurements. The time of closure of the fontanelles might be added with advantage; and it is not mentioned, in examining the spines of the vertebræ, that some of them are often slightly displaced from the median line. Other omissions which should have been supplied are: the points of emergence of the branches of the intercostal nerves, which are of special interest in intercostal neuralgia and herpes zoster; the relations of the individual lobes of the lungs to the thoracic wall; and the nerve-supply of the upper arm by the intercosto-humeral nerve. In the explanatory note on the diagrams of the cutaneous nerve-areas of the upper extremity taken from Henle an important error has occurred, *circumflex* being printed for *cutaneous*, but we suppose that no average student can be misled by it. These, however, are blemishes which can easily be removed, and we should not have noticed them had not the work been planned so comprehensively and carried out so thoroughly and conscientiously.

The Asclepiad. No. 21, Vol. VI. By B. W. RICHARDSON, M.D., F.R.S. London: Longmans, Green and Co. 1889.

IN this number, Dr. B. W. Richardson reprints the paper read before the Medical Society upon the absolute signs and proofs of death, and commences the consideration of the synthesis of disease, a subject which is to be further dealt with in succeeding chapters. More interesting, perhaps, at the present time are his remarks upon chloride of methyl as an anæsthetic, in which he reminds his readers of his reports upon this substance so far back as 1866-7. He insists that, as a local anæsthetic, it has no special action, its efficacy being due simply and solely to the cold induced. In this connexion he suggests the employment of what he terms a *freezing cautery* for the removal of warts and small pendulous growths, but considers that for this purpose carbonic acid will be preferable to methyl chloride. The idea of a cloak with a hood for use at funerals is warmly commended, and appears likely to diminish the risks of exposure. The number derives considerable interest from the portrait and history of Joseph Priestley, and an account of his discovery of oxygen. This essay is full of reverence for Priestley. Dr. Richardson's views upon the paradoxical vital properties of carbonic acid are well known, but the paper in which they were embodied in 1870 still merits perusal.

THE INTER-COLONIAL MEDICAL CONGRESS.

THIS Congress was held at Melbourne in the week ending Jan. 12th, and proved highly successful. Between 500 and 600 members were enrolled, of whom 200 came from without the colony of Victoria, so that it is clear that such gatherings are fully appreciated. The proceedings were opened on the 7th by Sir H. B. Loch, the Governor of Victoria; and the Premier, the Hon. Mr. Gillies, welcomed the Congress on behalf of the Government. The President, Mr. T. N. Fitzgerald, then gave his inaugural address, in the course of which he pointed out the favourable conditions under which the inhabitants of the colony live as contrasted with those of the mother country, and yet the great scourges of civilised communities—alcoholism, phthisis, and typhoid fever—were very prevalent. At the same time, although the mortality from diseases due to alcohol is high, there is, he asserted, in Australia a remarkable absence of drunkenness and gross intemperance. Hence he inferred that alcohol is much more potent in engendering hepatic and renal disease there than in a colder climate. [It may, we think, fairly be said that the alcoholic factor in disease is, in England at least, rather under- than over-estimated.] Phthisis, according to the President, is nearly as common in Australian as in English towns, and he deemed it a matter of gravest consideration that in a country so richly endowed, and with a climate so genial, this disease and typhoid fever should so abound. The existence of these diseases called for improved sanitation and drainage. The lack of thorough drainage seems to be a grave defect in Melbourne, and we find that the subject received much attention during the Congress, when a resolution was passed urging the Government to take steps to improve the sanitary state of the city. Mr. Fitzgerald praised the system of drainage in operation at Adelaide, and stated that in Sydney steps were being taken in the same direction. He augured hopefully of the future of the country from the devotion of the rising generation to a "lusty out-door life"; and closed an interesting and useful address by speaking of the boundlessness of medical inquiry, and expressing faith in the progress of the healing art. In the afternoon the members of the Congress were received by the Mayor of Melbourne at the Town Hall—the first of a series of hospitable entertainments which marked the week. The scientific work of the Congress seems to have been of a high order. On Monday an address in Medicine was delivered by Dr. Taylor of Brisbane, and one on anatomy and physiology by Prof. Anderson Stuart of Sydney University. On Tuesday, Dr. Stirling of Adelaide gave an address on Surgery, advocating the pursuit of its scientific as well as its practical side; and Dr. Batchelor of Dunedin gave an address on Obstetrics and Gynæcology. The other addresses at the general meetings included one on Comparative Mortality of the different Colonies from certain Diseases, by Dr. Maclaurin, President of the Board of Health, N.S.W.; and one on Lunacy in the Australian Colonies, by Dr. Manning, Inspector-General of the Insane, N.S.W. There were also special discussions upon Hydatid Disease, Typhoid Fever, and many papers in the various sections. At the close it was resolved to hold the next meeting of the Congress in Sydney about the end of 1891, and Dr. Maclaurin was unanimously chosen President.

HOSPITAL FOR CONSUMPTION, BROMPTON.—The committee, in their report to the last quarterly court of the governors, held last week, state that the whole of the 321 beds in the two buildings had been continuously occupied. In addition to the treatment in the wards, many patients who had improved in health had been sent at the expense of the hospital to convalescent homes on the south coast.

THE LANCET.

LONDON: SATURDAY, MARCH 9, 1889.

NEXT to his discovery of the tubercle bacillus there are few of Professor KOCH'S bacteriological researches that have awakened more interest than his detection in the choleraic dejecta and intestinal tissues of the "comma bacillus." How this discovery was challenged, and how it stimulated inquiries by commissions, with results mostly adverse to KOCH'S conclusions, are matters of history. We need hardly recall the commission sent from this country, in which Drs. KLEIN and GIBBES shared, or the subsequent commission to Spain, in which Drs. ROY, SHERRINGTON, and BROWN took part. In neither case was the pathogenetic position of the comma bacillus recognised. But it appears that during the time at which these observations were being carried on, like researches were being patiently pursued in a remote corner of the British Empire, where cholera is endemic. We allude to the work of Dr. NEIL MACLEOD and Mr. MILLES, of the scientific value of which our readers have had the opportunity of judging. The conclusions at which they have arrived are all the more valuable in that, independently, they have not only identified, isolated, and cultivated KOCH'S spirillum, but have confirmed his original statement as to its pathogenetic character. It remains to be seen how those who are opposed to this conclusion will meet the facts and arguments brought forward in this paper. It is essentially a bacteriologist's question, and it must be left to the experts to decide; but even the tyro in modern pathology can hardly fail to recognise that the evidence adduced by these experimenters is very strong. It will be noted that they lay stress on the examination of the stools in the stage of collapse, finding the bacillus almost invariably in forty cases so examined. They also demonstrated the presence of the microbe in the intestinal follicles, but their post-mortem observations were limited from the difficulty of obtaining permission for such inspection. Moreover, in one case, where the bacillus had abounded in the stools, it could not be found after death in the follicles; this case, however, was marked by "stripping of the epithelium, ulceration, and hæmorrhages." The authors admit that the relationship of the micro-organism to the disease is not materially affected by failure to detect it in the intestinal tissues after death; but they differ from Dr. KLEIN in their estimate of the importance of such invasion of tissue.

Having ascertained the frequent—indeed, almost invariable—coincidence of the bacillus with the choleraic bowel and its contents, Dr. MACLEOD and Mr. MILLES proceeded to search for an organism having not only a morphological similarity with that bacillus, but an identity in its behaviour on cultivation in various secretions and tissues in health and disease. Here, again, their results are, in their negative character, confirmatory of KOCH'S conclusion. Dr. KLEIN, as the most determined opponent of that conclusion, comes in for a great deal of criticism. His contention that the bacillus is rather the product than the cause of the pathological state of the intestine is not only met by reference to some errors in observation of the experiments on which he based this view, but is averred to necessarily lead to a belief in spontaneous generation. But undoubtedly the greatest difficulty that confronts the observer in this and other infective diseases is that of reproducing the disease by implanting the alleged virus in another animal. In cholera this difficulty is enhanced by the fact, first pointed out by KOCH, that the acidity of the gastric juice hinders the development of the bacillus. Dr. MACLEOD has pursued this part of the inquiry with vigour, and has satisfied himself that the disease can be produced in the guinea-pig, or, as he more cautiously phrases it, the comma bacillus is "pathogenic to the guinea-pig," when proper precautions are taken to facilitate its entrance into the intestine by neutralising the acidity of the gastric contents, and by controlling intestinal peristalsis. These experiments are repetitions of those undertaken by KOCH, in order to meet the objections to the plan of introducing the organism direct into the intestine through a wound in the abdomen.

The bearings of the acceptance of the view that the comma bacillus is the cause of cholera upon the vexed question of the contagiousness of the disease, and upon the wider epidemiological facts of which PETTENKOFER is the brilliant exponent, are touched on in this paper. To our thinking, there does not seem to be so much antagonism between these subjects as is commonly supposed to exist. It is our want of knowledge of the conditions under which the bacillus may flourish outside the body that gives rise to the impression of conflict between the contending schools. It may be long before these doctrines are harmonised, but at least it may be admitted that in the detection of this characteristic microbe, so invariably a concomitant of cholera, we possess a means of diagnosis of great importance. To be forewarned is to be forearmed; and it is surely conceivable that preventive measures against the spread of cholera in a country like ours might be taken with greater effect if the diagnosis of Asiatic cholera could be always made with certainty. From another point of view, too, the confirmation of KOCH'S results by Dr. MACLEOD and Mr. MILLES must be welcomed; for there can be no question that, if KOCH'S view is the true one, our conception of the disease will become clearer and simpler than it has been heretofore. Upon the etiology of cholera the scientific world for more than a generation has been tossed to and fro by many a wind of doctrine; and the result has been a bewildering congeries of statements and counter-statements, all having some kind of foundation in the known facts of the disease. It would be a great gain to medicine to feel assured that we had at last arrived at a simple solution of the problem. Every contribution to this end is of value; and when a general agreement on the nature and source of the disease shall have been attained, it will of necessity follow that many facts which are now quite obscure, or appear wholly discordant one with another, will receive adequate explanation, whilst an impetus will be given to the prevention and treatment of the scourge.

THE letter from Dr. DUPRÉ, which appears in another column, is remarkable not only on account of the scientific

eminence of the author, but also because he was for some years a trusted adviser to the late Metropolitan Board of Works. That Dr. DUPRÉ should defend the Board is only natural. He has done so consistently throughout, and was, indeed, one of those who in 1883 believed that the sewage inflicted no serious injury on the river, and that the purifying power was in excess of the polluting influences. He cannot, therefore, be considered an impartial witness, and when he accuses Dr. CORFIELD of ignorance and inaccuracy it becomes necessary to examine his statements with care.

The first point in dispute is in respect to the recommendations of the Royal Commissioners on Metropolitan Sewage Discharge. Dr. CORFIELD asserted, as we have repeatedly done, that the Board had ignored these recommendations. It appears to us that this is a literal fact. It is perfectly true that the Commissioners sanctioned the precipitation of sewage sludge at or near the present outfalls, but with regard to the effluent they added the following words: "It would require further purification; and this, according to the present state of knowledge, *can only be done effectually by its application to land.*" The italics are ours. Can it possibly be said that this recommendation has not been ignored? No attempt has ever been made by the now moribund Board to devise a scheme for land filtration, which in the opinion of the Commissioners is essential for safety. Sir HENRY ROSCOE, who was subsequently consulted by the Board, endorsed the opinion of the Commissioners, and stated in one of his reports that he felt convinced that sooner or later the sewage "must either be filtered through land or discharged into the estuary at a point not higher than Sea Reach." The Board finally decided to precipitate the sludge, to "purify" the effluent by permanganate, and then throw it into the river at the present outfalls. Dr. DUPRÉ asks, "What is the difference between this scheme and the first one proposed by the Royal Commission?" Just the difference, we reply, between obeying and disobeying a mandate issued by a most competent authority and confirmed by their own eminent scientific adviser. Dr. DUPRÉ defines the difference as "simply the substitution of purification of the effluent by permanganate—a process not thought of at the time of the Royal Commission." The last statement is an entire mistake. Dr. DUPRÉ, when he wrote it, had evidently forgotten that on the 29th October, 1884, Mr. DIBDEN, chemist to the Metropolitan Board of Works, described the process fully to the Commissioners, and suggested the purification of the effluent in this way. (Question No. 19,663.) The scheme was before the Commissioners, and they thought it insufficient, as Sir HENRY ROSCOE has done since.

In the study of sewage disposal the question of cost is only second to that of efficiency, and Dr. DUPRÉ does well in discussing it. We do not question his statement about the initial and permanent cost of the works now in course of erection. Furthermore, it may be admitted that if these works had been erected at Hole Haven the expense would have been rather greater than less. If we add that the additional expense incident to the transmission of the sewage to Sea Reach would be very great, and might amount to the sum estimated by Sir JOSEPH BAZALGETTE, and quoted by Dr. DUPRÉ, we can hardly be accused of shirking difficulties. That a permanent solution of the sewage question in London will be expensive we all know. But recognising fully the cost which will be entailed, we say again, as we have so often said before, that the work is urgently necessary, that it must ere long be undertaken, and that it will inflict only a very slight burden upon the richest city in the world. Sir JOSEPH BAZALGETTE presented to the Royal Commission a scheme for carrying the sewage not only of London, but of the whole of the districts round London, to Sea Reach. This would indeed be a splendid solution of the whole difficulty. According to the eminent engineer who propounded it, the work could be completed in three years, and the expense would be covered by a rate of 1¾*d.* per £. Had the Board only had the necessary courage, the work would have been finished, or nearly finished, by this time, many a populous district would have been relieved of an intolerable nuisance and anxiety, and the sewage difficulty of London would be at an end.

Only one point remains for consideration, and here again we are compelled to differ from Dr. DUPRÉ. Dr. DUPRÉ contends that, even if the sewage is ultimately taken down to Sea Reach, not a single penny of the present expense will have been wasted. In a sense this is true; for, even if the sewage be taken down to Canvey Island, it will be possible to go on precipitating at Barking and Crossness. As we are already committed to an initial expense of £1,140,000, doubtless this is the course that will and must at first be adopted; but, none the less, we think the selection of the present sites a great blunder. An enormous quantity of sludge will be produced in the works, and the whole of this must be carried by steamers, at great expense, to be thrown into the sea; whereas, if the sewage were treated at Canvey Island, the cost of transport so far would be saved, and we are convinced that the sludge could be utilised more or less profitably on the low lands bordering the Thames estuary.

In one respect we are able to agree heartily with Dr. DUPRÉ. We have always done justice to the skill and energy of Mr. DIBDEN. The faults of procrastination and obstinacy, with which we have taxed the Metropolitan Board of Works, are by no means to be ascribed to their chemist, and we congratulate the new County Council upon having gained so experienced and valuable an officer. Let a new and complete scheme be adopted, and we believe that Mr. DIBDEN will be as willing as he is able to superintend its execution.

WHEN Scotland has come to the conclusion that further legislation for habitual drunkards is necessary, it may be supposed that something will really be done. Scotland is notorious for its love of freedom; it is scarcely less so for its love of whisky; and for Scotland or any society of leading Scotchmen to pass a resolution to restrict the freedom of those who cannot keep their consumption of alcohol within reasonable bounds is significant indeed. The discussion which has culminated in such a resolution took place at a meeting of the Medico-Chirurgical Society. The meeting was specially called for the purpose of such a discussion. Various distinguished physicians and lawyers were present, and others who could not be present sent notes regretting their inability to attend, but strongly expressing their sympathy with the objects of the meeting.

Another fact which adds to the significance of this discussion and its resultant resolution is that both are reported at length in a well-known Scotch newspaper, and that the resolution is supported by our contemporary in a decided and hearty way. Our contemporary, in dealing with this question, is practical; it does not indulge in sentimental politics or in vain moralisation over national vices. It urges a new and real limitation of personal liberty, but we think that true liberty itself is involved in the reform. Indeed, this is really the point of the question, judged from a medical or a physiological point of view, as was very well brought out in the discussion to which we refer, and which we now notice briefly, but with great satisfaction.

First let us say that the parties to the discussion were medical men and lawyers of repute—chiefly, however, physicians; and that it took place at a special meeting of the above-named Society. We sometimes think that our Medical Societies live too much in the clouds, and that they might descend occasionally from transcendental pathologies to the consideration of urgent medico-legal, or medico-political, or medico-social questions. At any rate, the Medico-Chirurgical Society of Edinburgh deserves credit for regarding the question of the further legislation for habitual drunkards well within its care and worthy of its best attention. The next thing we have to say is that there was but one opinion in the meeting, and that to the effect that past legislation on this subject has been a complete failure—as Dr. YELLOWLEES said, "a miserable failure." The present law presupposes the consent and concurrence of the wretched drunkard in measures for putting alcohol out of his reach for a year, which is about as reasonable as to ask the co-operation of the confirmed burglar in his own arrest. Professor Sir DOUGLAS MACLAGAN, Dr. GAIRDNER, and others expressed strongly in letters their opinion of the need of a change in the law with respect to habitual drunkards. Sir D. MACLAGAN, in his letter, said he had no doubt that under the Bill they were discussing, drawn by Mr. CHARLES MORTON, W.S., and late Crown Agent for Scotland, the legal provisions were ample "for securing anyone against an infringement of that which is, as regards this subject, an intense humbug—the liberty of the subject." Mr. J. B. BALFOUR, Q.C., M.P., wrote: "The subject is one the interest and importance of which cannot be overrated. I should be glad if anything could be done in the way of legislation to mitigate so great an evil."

Dr. BATTY TUKE insisted on a distinction between those whose drunkenness was a pure vice and those whose drunkenness was an insanity. He thought that for the former class of cases the remedy lay in a reform of the licensing laws, but he would support the present Bill in favour of drunkards whose vice was a veritable insanity. The distinction between these classes, he thought, should be made by a Court, and not by medical men. Dr. YELLOWLEES thought it hard that respectable lunatics should be housed with the class of habitual drunkards—an alienist's estimate of the latter class of cases which should be noted.

We heartily urge the consideration of this Bill on all who have the power to promote its progress. Dr. CAMERON would be the first to admit that the present Bill is inadequate. Like his predecessor in this legislation, Dr. DALRYMPLE, he would doubtless desire to have recognised the right on the part of the State to *compel* the seclusion of a man who, regardless of all reason and interest, drinks away his life, his property, and his soul, and to secure this not only on behalf of habitual drunkards who can pay for residence in restorative homes as provided in this Bill, but for others that are poor and wretched. We heartily agree so far with Dr. TUKE that a reform in the licensing laws is much needed for the abatement of the common and selfish vice of drunkenness. But as representing medical men, who are now helpless in dealing with habitual drunkards, we demand special legislation for them. To speak of the liberty of a habitual drunkard is a contradiction, for the effect of the very first glass of drink, which he cannot personally resist, is to paralyse the faculty of freedom and will. And the effects of this form of disease are as veritably disastrous and tragical as those of ordinary insanity. We have always insisted that the existing Act was entirely inadequate; and we need do no more now than direct the attention of sticklers for personal liberty to this concurrence of Scotch physicians, lawyers, and journalists in demanding that Scotland at least, without waiting for Ireland and England, shall have the benefit of stronger legislation.

THE Association of Members of the Royal College of Surgeons, as our readers will have seen in our last issue, held their meeting on Feb. 28th, in the Venetian Room of the Holborn Restaurant, after having obtained formal proofs that the doors of their own College were closed against them. The proceedings were conducted by the Members temperately and in a legitimate spirit, and the Council of the College has, we cannot help thinking, committed a serious mistake in treating the assemblage as though it were intended to be riotous and the circumstances as illegal, and the parade of a force of policemen outside the College premises as a demonstration, although in accordance with precedents, will, we fear, be not unnaturally deeply resented by the majority of Fellows and Members of the College.

The precedents to which we refer are these. First, as will be seen by reference to our issue of Jan 19th, 1884, at the memorable meeting on March 7th, 1831, "Bow-street runners" were sent for to arrest the late Mr. WAKLEY, the founder of THE LANCET. Secondly, in anticipation of the meeting held on March 24th, 1870, the resident porter of the College was sworn in as a special constable. Some of our readers may remember that at the meeting the President denied this fact; but on April 30th, 1870, we published the following letter addressed to us by the gentleman who is now junior Vice-President of the College:—

THE SPECIAL CONSTABLE AT THE COLLEGE OF SURGEONS.

To the Editor of THE LANCET.

SIR,—As the President of the College of Surgeons did not hesitate to deny publicly the accuracy of my statement that one of the porters of the College had been sworn in as a special constable prior to the meeting of the Fellows and Members on the 24th March, I took the trouble to call in Bow-street on Monday last, and ascertained from Mr. Burnaby, the chief clerk, that Mr. Stone came to him three days before the meeting, and stated the wish of the College authorities that a constable should be sworn in, as a dis-

turbance was anticipated. Mr. Burnaby referred the College to Scotland-yard; and I have to-day, in answer to inquiry addressed to the Chief Commissioner, received an official letter, signed by Colonel Henderson, of which the following is a copy:—

"Whitehall-place, April 27th, 1870.

"SIR,—I have to acknowledge the receipt of your letter of the 26th inst., and to acquaint you, in reply, that at the request of the President of the College of Surgeons, the resident porter was sworn in as a special constable on the 23rd March last, to prevent felonies and disorder."

Comment upon the above is unnecessary. I merely request that you will enable the members of the profession to appreciate the facts of the case.

I am, Sir, your obedient servant,

CHRISTOPHER HEATH, F.R.C.S.

Cavendish-place, April 27th, 1870.

It would be well for those surgeons who are interested in the present to refer to the past, and to read in the back volumes of THE LANCET the historical events and expressed opinions of the profession both in 1831 and 1870. The struggle in 1889 presents in some respects a strong likeness to that of 1831; it is no mean compliment to the forbearance and long-suffering of the Members of the College that their grievances, felt and expressed for the last sixty years, should be as yet unredressed. The solution of this problem of reform is *now* nearer than some may believe. In the appeal to Parliament by the Fellows and Members rests the first sure advancing step of progress; the future maintenance of any rights therein reacquired may be safely left in the trust of a reunited corporation. A contest of individuals against an old corporation demands ceaseless activity and much expense. To promote and carry a Bill through Parliament entails heavy expenditure. We trust, therefore, that all Fellows and Members who have the welfare of their College at heart, and are anxious to have what they deem to be their just rights recognised, will contribute towards the outlay which must be involved in the endeavour to secure, in a strictly constitutional manner, to the constituents of the Royal College of Surgeons of England that measure of reform to which they are undoubtedly entitled.

Annotations.

"Ne quid nimis."

RECENT SMALL-POX MORTALITY IN ENGLAND.

THE rate of mortality from small-pox in recent years has fallen far below the rate due to any other of the principal zymotic diseases, if we exclude typhus, which, if we may judge from recent statistics, will probably become extinct in England. The deaths from small-pox in England and Wales during last year were, according to the quarterly returns of the Registrar-General, 1022, being equal to a rate of 36 per million of the estimated population; in the two preceding years 1886 and 1887, the rates were still lower, having been only 10 and 18 per million. The rates in recent years, indeed, since the last severe epidemic in 1871–2, have been so persistently low that it may be worth while to compare them with the rates that prevailed in previous years, for which we possess trustworthy statistics. During the first five years of civil registration (1838–42), when vaccination was optional, the average annual rate per million was 576. Unfortunately, the Registrar-General's reports contain no information relating to the causes of death during the four years 1843–46, when small-pox was, we know, very fatal in London. In the following seven years (1847–53), during which vaccination was still optional, the mean annual death-rate from this disease was 305 per million in England and Wales. Vaccination was made compulsory in 1853, and in the following eighteen years (1854–71), including and concluding with the memorable epidemic year 1871, the mean annual death-rate from small-pox in England and Wales declined to 223 per million. One of the results of the small-pox epidemic in 1871, was to prove that the compulsory clauses of the Vaccination Act of 1853 were not efficiently enforced, leading to the further Act of 1871, which enacted the compulsory appointment of vaccination officers by boards of guardians, and provided other means for ensuring the more general operation of the compulsory clauses of the previous Act. The epidemic of 1871 did not abate until nearly the end of 1872, and the English death-rate from this disease was equal to 821 per million in that year. Since 1872 the highest rates in England and Wales have been 173 in 1877, 119 in 1881, and 103 in 1885, the epidemic prevalence of the disease, especially in 1877 and 1881, being mainly confined to London. Excepting these three years, the English death-rate from small-pox has not reached 100 per million since 1872, when compulsory vaccination was first efficiently enforced by vaccination officers. Thus we are now able to judge of the result of efficiently enforced compulsory vaccination from the statistics of the seventeen years 1872–88. During these seventeen years the mean annual death-rate from small-pox in England and Wales, according to the mortality statistics of the Registrar-General was 111 per million, or if we exclude the year 1872, during which the epidemic of 1871–2 still prevailed, the mean rate in the last sixteen years has not exceeded 67. If we compare this with the mean rate during the twelve years of optional vaccination for which we have information (1838–42 and 1847–53), which is 418, or with the mean rate in the eighteen years (1854–71) of compulsory vaccination not efficiently enforced—namely, 223,—we are inevitably led to conclusions as to the beneficial results of the general adoption of infantile vaccination, which appear to be practically beyond discussion.

INCREASE OF DEFECTIVE VISION.

IN the House of Commons, on Feb. 28th, Dr. Farquharson drew attention to the statements recently made by responsible authorities as to the rapid increase in England of short sight and other forms of defective vision, and suggested that a competent ophthalmic surgeon should, by way of test, examine the children of some one Board school. Sir W. Hart Dyke, in reply, stated that the Department was quite alive to the importance of the question, and that the attention of the inspectors would be specially directed to testing the accuracy of the alleged facts. He added that in criticising the plans of schools special care was taken by the Department that enough light was secured, and that it fell in the right direction. It is to be hoped that this subject will not be allowed to drop. It is extremely difficult, perhaps impossible, for anyone to say that myopia or astigmatism is on the increase. Scarcely thirty years have passed away since the scientific investigation of errors of refraction was commenced in England. This occurred after the appearance of Donders' well-known treatise, and, it must be acknowledged, is a period too short to allow of any positive conclusions being drawn, since it is quite reasonable to maintain that the increase of such affections, as indicated by the larger number of

children and adults who find it requisite to wear correcting glasses, is only apparent and not real, being due to the recognition of the conditions requiring glasses, and to the better knowledge of the mechanical means of correction; but every ophthalmic surgeon would admit that there are at least five circumstances that, apart from hereditary predisposition, require attention, since each constitutes a factor in the production of myopia. These are—the amount of work, the degree of light, the size and distinctness of the type used, the supply of food, and lastly the position in which the child occupies in regard to his book. The folly of making young children work at high pressure has been too often dwelt upon in these columns to need repetition here. We are much disposed to insist on the abolition of evening lessons. Teachers should be teachers in school hours and not hearers of lessons worked up at home. In regard to light, Cohn, whose "Hygiene of the Eye" contains much useful information, maintains that there should be one square foot of window to every five square feet of floor, and that the light should, if possible, be allowed to enter from the south or east, and preferably from the south. The quantity of light should at least be sufficient to enable ordinary print to be read with ease in the darkest corner of the room. The Roman type of the Board school books, as we have personally tested, is exceedingly clear and good, and is certainly immeasurably superior to the German type, so that no improvement can be made in that direction. In regard to food, which is an extremely important point, it is difficult to say anything. Good food for the children depends in most cases on the willingness of the father to forego liquor, and on the thriftiness and intelligence of the mother; and some instruction in cookery, with less book-work, might be taught the girls with great advantage to the future generation. Finally, the position of the child at the desk is a point that has scarcely been attended to in this country, though it has been much discussed abroad, and many patterns of desks have been exhibited at German meetings and societies, each having some advantage as to height or slope or position in regard to the bench on which the student sits. All this requires careful attention, and Dr. Farquharson will have done good service to the pupils, not only of the Board schools of this country but to those of the numerous private and public seminaries, if he continues from time to time to remind the authorities that the more intelligent part of the community are keenly alive to the importance of physical conditions in developing diseases of the eye, which, when once established, are likely to be progressive, and which constitute a positive and insurmountable bar to the entrance into those very services for which all the hard work is undertaken.

DINNER TO SIR EDWIN CHADWICK, K.C.B.

THE dinner at the First Avenue Hotel, given on Saturday evening last to the veteran sanitary reformer, Edwin Chadwick, was not only a marked success, but was quite unique in character. The recipient of the honour was in his ninetieth year, an event in itself, and seemed to be in as good health and spirits as anyone present. Then came the happy association of knighthood, conferred by the Queen the day before on probably the oldest of her subjects upon whom the distinction has been bestowed; and to complete all was the presentation of a memorial from his friends and the members of the Society of Public Sanitary Inspectors, over which he presides. In the memorial reference was made to the facts that the honoured guest of the occasion had been engaged seventy years in the public service, and that upon his famous report on the "Sanitary Condition of the Labouring Classes," and on his introduction of the "Half-time System of Education," the present advanced state of sanitation largely rests. These no doubt were his two great works, but, as Sir Lyon Playfair and the chairman pointed out in their speeches, many other labours of an incidental kind and of remarkable service formed parts also of one of the most singular and interesting careers amongst the living representatives of science of the present century. The chairman, in touching on these side services, described the battle their friend had fought with the authorities of the time in carrying out his suggestion that the causes of death, based on a duly qualified medical certificate, should be supplied in the registration of deaths, and how upon the success of his efforts—a success won by absolute importunity—the whole of the series of facts and records of disease obtained through the Registrar-General's returns were secured. Sir Edwin Chadwick does not belong to the brotherhood of physic. Originally he was called to the bar, but becoming connected in early life with official work for the Government in relation to Poor-law reform, he naturally glided into sanitation, and for a lifetime has been more closely allied to medicine on its preventive side than to any other professional section of the community. That he has won the friendship and admiration of our fraternity was well indicated at the late ceremony, in which the post of honour as chairman was filled by Dr. B. W. Richardson, and in which Dr. G. Buchanan, the present head of the Medical Department of the State, Dr. Mouat, Dr. Dudfield, Professor Corfield, Dr. Farquharson, M.P., Dr. Cameron, M.P., Sir Spencer Wells, Dr. Carpenter, Dr. Haward, Sir Richard Owen, and many others joined with representative members of both Houses of Parliament, with men eminent in science, literature, and art, and with over a hundred gentlemen engaged in the practical work of sanitation, to welcome him into his ninetieth year, to congratulate him on his new honour so nobly earned, and to wish him, as the chairman put it, a continuance of life "blessed with all his heart could desire and God bestow." For our own parts, we re-echo the same good wishes. In past times THE LANCET was not slow to commend what Sir E. Chadwick did for the public good, nor to challenge everything coming from him that appeared, according to the judgment of the Editor, opposed to the public interests. But either in praise or blame, a just appreciation of his vast labours and strong intellect was at all times accorded, and we are sure that, through the whole of the profession of medicine, there will be felt the sentiment of warm congratulation and respect for the venerable man who has borne the motto, *Sanitas, sanitatis omnia sanitas*, so long, so usefully, and so untiringly.

A NEW TREATMENT OF ANEURYSM.

OUR Glasgow correspondent sent us last week a short account of a demonstration by Dr. Macewen of a new method of treating aneurysms. Needles are passed into the sac in such a way as just to touch the lining of the opposite wall. The oscillation of the needles causes a succession of fine scratches "on the inner surface of the endothelium, irritating it slightly and leading to the proliferation of leucocytes," which develop into a white fibrous mass. It is certainly difficult and probably unsafe to criticise a method of treatment without a knowledge of all the details, which were no doubt forthcoming at the meeting at which the demonstration was made. For example, we do not know if this method has been tried in the human subject, and whether the results have been submitted to careful examination. But, judging from the brief account quoted from, this method does not commend itself to us. We cannot think that it is based on right principles. Of course we need not say that in aneurysms coming under

a surgeon's notice there is no endothelial lining of the sac, and that in the majority of cases there is more or less blood clot or laminated fibrin. We can quite imagine that the scratching of the needles might be useful in starting fresh coagulation, and so leading to the consolidation of the aneurysm. But it would require enormously strong evidence to prove that proliferating leucocytes could organise into a firm mass of connective tissue amid the tumultuous flow in a large aneurysm. And it also seems clear that the layers of laminated fibrin within the true sac of an aneurysm are a very serious obstacle to organisation of any material within them. Other practical objections to this plan of treatment are the possibility of causing ulceration of the sac or acute inflammation of the surrounding tissues, and also the difficulty of adjusting the needles with sufficient precision.

THE RELATIONS OF PURE DRINKING-WATER TO HEALTH.

ON this well-worn theme, Dr. Drasche of Vienna contributes a fresh and highly interesting study, compiled from the sanitary experience of the Austrian capital. Ancient Rome received from without wellnigh seven times the volume of water now poured into modern Rome, which, in its turn, remains the city best supplied with water in the world. Next to Rome, Vienna, according to Dr. Drasche, is the most favoured capital, if not in the abundance, at least in the purity, of its drinking-water; but this honourable distinction dates only from 1866, when the geologist Suess tapped the Höllengebirge,—or rather from 1873, when the distribution of water from this source was made general throughout the city. What was the result? A hundred years ago the death-rate of Vienna was 63 per 1000; up to 1874 it had, thanks to the widening of the streets and similar salutary innovations, fallen to 35·2; and now, since the Höllengebirge supplied the drinking-water, it has sunk to 25·35 per 1000. This great advance in the public health saves Vienna one million florins yearly, which would otherwise be spent on treatment of the sick in hospital. Up to 1874 the annual death-rate from typhoid alone was 700; since the improved water-supply of that year it has sunk to 169. Satisfactory as is this lowered mortality, there is no reason why it should not be brought down to the irreducible minimum by still further sanitary amelioration; and indeed the close of last year administered a pointed reminder to the Viennese municipality that its efforts in behalf of the public health could tolerate no relaxation. A rather serious recurrence of typhoid necessitated another inspection of the water-supply, and Dr. Drasche, after a series of observations, found that the population of Vienna had far outgrown the capacity of the Höllengebirge and other sources to meet its wants, no fewer than 4000 houses and 200,000 inhabitants having been added to the city since 1866. Nine years ago this defect of balance between the population and its water-supply began to be felt, and a new source was tapped near Potschach; while the Schwarza Canal in 1866 was further pressed into the public service, without, however, due precaution being taken as to the purity of its water. The recrudescence of typhoid above referred to is popularly traced to this latter source, and Dr. Drasche practically endorses the suspicion by proposing to tap a higher and purer reservoir. Loyally seconded as he is by the Viennese municipality, he is bound to succeed, and to confirm the example so strikingly illustrated by Rome, ancient and modern, that, concurrently with the enlargement of cities and the increase of their inhabitants, their water-supply must from time to time be reinforced, and always, as far as possible, from greater and more distant altitudes.

THE DIET OF THE SOLDIER.

THE subject of the nature, quality, and amount of the food provided for soldiers is at present exciting a good deal of interest. A number of communications respecting it have lately appeared, and, among the rest, a letter from Mr. Archibald Forbes, who speaks with a practical knowledge of the question, having himself "eaten soldiers' rations for some of the best years" of his life. We are pleased to find that his suggestions are quite in accord with the views we have expressed on the subject. He does not think the amount of the meat ration too small, but he objects to the quality as supplied under the existing system, to the want of variety, to the disproportionate intervals between the meals, and to the inadequate means of cooking and the incompetence of the cooks. As we have before indicated (THE LANCET, Aug. 11th, 1888), the changes which seem most imperatively required are: the introduction of an efficient system of supervision as to the quantity and quality of the food supplied; an improvement in the system of cooking, and, as essential to that, in the instruction of the soldiers employed on that duty; a complete revision of the hours at which the different meals are provided; and the adoption of a supper meal instead of tea. Mr. Forbes makes some judicious suggestions as to the mode in which these improvements might be effected, and especially would throw upon the soldier himself a greater amount of the duty of catering. We feel sure that much might be effected in this way, and that it could easily be carried out if the officers were instructed to take a more active interest in this important method of keeping the men effective and contented. In some regiments this is done with most satisfactory results. It should be the duty of the military authorities so to modify the system as to make this the rule of the service, instead of, as at present, the praiseworthy and notable exception.

FALSTAFF'S DEATH-BED.

IN *Blackwood* this month appears an able article from the pen of Dr. Creighton on the correct reading of that much-disputed passage in Dame Quickly's report of Falstaff's death, "His nose was as sharp as a pen, and 'a babbled of green fields," and which Dr. Creighton would have us read, "His nose was as sharp as a pen on a table of green frieze," and supports this emendation with considerable force and learning. According to Dr. Creighton, Shakspeare made Falstaff die of the sweating sickness: first, because in the epilogue to the second part of "Henry IV." he promises that he shall die of "a sweat"; secondly, because many of the symptoms of death, as noticed by Mrs. Quickly, correspond with those given by Caius in his "Boke of Counseil against the sweat"; and lastly, because the skin in "the sweat" often assumed a pimply roughness, which at first would be of a turgid and red tinge, but as the cadaveric hue of death came on would become *chlorotic* or greenish: in fact, the colloquial name given to the sweating sickness later on, in Germany, was *der Friesel*. The arguments in favour of the older reading are, briefly, that the sweating sickness did not make its appearance till more than seventy years later; that had Shakspeare really intended to represent Falstaff as dying of that disorder he would have said "the sweat," instead of "a sweat." Moreover, it is not natural to make Mrs. Quickly such a minute clinical observer; whilst the picture of the drawn features and the childish and innocent babblings of the old sinner's delirium is one of those powerful touches that the poet delighted to draw. Besides, there was no necessity to make Falstaff die of an acute disease when Shakspeare had already represented him as suffering under a complication of disorders, with symptoms so graphically described that we can readily diagnose his disease. The Chief Justice,

addressing Falstaff, says: "Have you not a moist eye, a dry hand, a yellow cheek, a white beard, a decreasing leg, an increasing belly?" &c.: the yellow cheek, the increasing swelling of the belly, with the shrunken limbs, telling of the onset of the jaundice, and the ascites which accompany the later stage of cirrhosis of the liver. Nor are the presages of his death incompatible with this view: the burning heats succeeded by sensations of intense cold, the rambling delirium, and pinched features are characteristic of death by this disease. But whichever reading may ultimately be adopted by the critics—and the question is sure of securing ample discussion,—we must feel indebted to Dr. Creighton for introducing the subject, and giving us an intellectual treat in the scholarly manner in which he has arranged his facts.

THE ILLINOIS STATE BOARD OF HEALTH.

THE Governor of Illinois, in his biennial address to the General Assembly, pays a well-merited tribute to the labours of the State Board of Health. In the course of this address he wisely gives prominence to the continuance of a system of house-to-house inspection, which was inaugurated as a means of defence against cholera in 1883, and which has been maintained ever since; and he points out that the cities, towns, and villages of the State have, in consequence of this work, steadily improved in their sanitary condition, until it can now be asserted that Illinois exhibits the healthiest and most favourable circumstances, in so far as length of life is concerned, of any that are enjoyed in the union. This we can readily understand, for in this country it has again and again been shown that house-to-house inspection by sanitary officers, under competent medical supervision, is one of the most valuable of all forms of sanitary work. Quarantine in a modified sense is said to have been of value to the State, but the Governor congratulates the Secretary of the Board for having refused help from the public treasury for the maintenance of restrictions which were unnecessary, and opposed to scientific experience. The labours of the State Board in connexion with the small-pox epidemic of 1881–82 are spoken of in terms of commendation, and it is held that through the preventive and protective measures then adopted, and since enforced, there has been no repetition of the disease in an epidemic form. We conclude that these measures aim at securing universal infantile vaccination, and the repetition of the operation later on in life; for apart from this we cannot but feel that present experience is against any trust in escape from the disease; and as to the case quoted, it is perhaps somewhat early to feel any sense of security, especially in the case of a disease which has so often exhibited somewhat lengthened periods of quiescence between its epidemic appearances.

THE PHYSIQUE OF LADY NURSES.

THE faculty for nursing is not limited to any social grade. Not a little tenderness and real though untrained ability may often be found in homes consisting of one or two rooms, as well as in those where every comfort abounds. At the same time it must be allowed that the position of a lady confers upon her advantages which ought, and very commonly do, materially increase her usefulness as a nurse. She can bring to the work not only a woman's heart and hand, but usually also a trained mind, which readily takes in the meaning of new duties, and that element of tact or native skill which is bred with her social being. In virtue of these qualities, her presence by the sick bed, whether of rich or poor, is recognised as an actual necessity. There is much in this position to attract a generous nature. We instinctively think of it as implying the exercise of much unselfish kindness, as exalting, refining, and utilising whatever goodwill to our neighbours exists in mankind. It is also a field for the employment of more hardy qualities. Acuteness, energy, judgment, firmness, endurance, are all in daily request, and the sick room or ward has thus become an excellent school for the formation of character. This is the bright side of the picture, but we have said enough to indicate that the nursing life is not an easy one. Long hours on duty, the monotony of a daily round, severe bodily exertion, and actual drudgery are among its familiar features, and ought to be recognised as such by those who undertake its duties. We may safely say that not every apparently healthy young lady is physically qualified to nurse. Willingness and self-denial are much, but not enough. A certain degree of bodily vigour is no less necessary. The possession of a powerful frame, indeed, is not essential, but capacity for sustained effort and freedom from any marked constitutional delicacy are indispensable; and there is force in the objection which would exclude from the ranks of probationers young ladies hardly matured in womanhood, and to whom any exertion beyond that of the lighter domestic tasks is unfamiliar. We would be loth to discourage any of these willing helpers, but some care in selection at the outset is needful in order to prevent an ever-possible breakdown from physical overstrain.

INFECTION IN CHURCHES AND SCHOOLS.

ACCORDING to Dr. Russell, medical officer of health for the city of Glasgow, there exists an apparently definite connexion between church attendance and the conveyance of infectious disease. The evidence brought forward by him in support of this view is somewhat interesting. It appears that among the congregation of a Gaelic church comprising a number of Highland servants and others, forty-two persons were taken ill with measles during last January. Of these, one showed signs of the disease on Jan. 3rd, eleven between the 6th and 13th, and five on the 14th. Between the 14th and 19th one fresh case occurred, while between the 19th and 25th no fewer than twenty-two became affected. In the remaining two cases the disease appeared on the 26th and 27th. Dr. Russell suggests very plausibly that if twelve to fourteen days be reckoned as the incubation period in measles, the date of primary contact with infection might for the first group of cases, comprising the two series of five and eleven, be fixed at Dec. 30th (Sunday). Obviously this calculation would accurately suit the case of those in whom the attack began on Jan. 14th. The infection of the second large group he explains as being due to the attendance in church of persons already in the catarrhal stage on the two following Sundays, Jan. 6th and 13th. As a matter of fact, two girls were in attendance on December 30th and January 13th respectively, and one of these had come from an infected house, while the other had actually taken the disease two days before. Another curious fact is that two other girls who usually worshipped elsewhere, but were in this particular church on the 13th, became ill on the 26th. Of course, there is some room for possible error in statistics of this kind, but the facts as tabulated, it must be allowed, give some colour to the interpretation put upon them. Whatever their accurate significance, however, the proved attendance of two persons capable of spreading infection is in itself a noteworthy point. Such occurrences, we fear, are not rare. To some extent they may even be unavoidable, but we need not add that wilful or careless neglect in this particular implies for the offender a serious responsibility for possible consequences. It should be a standing rule that the existence of contagious disease in a house, unless something like perfect isolation and disinfection can be guaranteed, and preferably

even then, debars the healthy members of the household from attendance at school, church, or other place of concourse. Should business or obvious duty interfere with such an arrangement, personal disinfection on the part of any possible medium of communication should be insisted on. Among the well-to-do it is not very difficult thus to limit the spread of disease; but among the overcrowded poor every precaution must be strained in order to arrive at bare security.

PUBLIC HEALTH BILLS.

IT is stated by a contemporary that the Government intend to bring forward two important Bills dealing with the public health. The first is to be a statute consolidating within the compass of one Act the various existing Acts having reference to public sanitation and the housing of the working classes. Amongst other things, the Bill will provide that a medical officer of health must reside in the district to which he is appointed, and that sanitary inspectors must be duly qualified persons. The second Bill will be a measure dealing with the compulsory notification of infectious diseases to the authorities for the purpose of isolation, according to which a medical man, as soon as he attends a case of infectious disease, will be bound to notify the fact at once to the local sanitary authority, who will take steps if necessary to isolate the patient. In London the doctor will be obliged to give notice both to the vestry and to the Metropolitan Asylums Board. It is further contemplated, as already announced by Mr. Ritchie in the House of Commons, to transfer to the London County Council the power under the Nuisances Removal Act, in cases where the local authority fails to do its duty, of ordering a constable to procure a summons against the owner or occupier for a nuisance.

THE RELATION OF RICKETS TO CERTAIN ODONTOMES.

MR. J. BLAND SUTTON'S communication at the last meeting of the Odontological Society tends to show that a relation exists between rickets and some forms of odontomes. He stated that he had met with fibrous odontomes—that is, odontomes in the process of development—in goats, marsupials, and bears, and generally in association with rickets. When the skull is affected by rickets, it is chiefly the bones preformed in membrane that are attacked, and it is not difficult to understand that the cementum, the follicles of the teeth, and the alveolar processes which have a like origin, should be similarly affected. Shaw long ago remarked that in rickety children the eruption of the teeth was considerably delayed, and attributed this to the large size of the teeth and the small size of the jaw. The specimen exhibited by Mr. Sutton was the skull of a rickety Assyrian bear, which had been killed on account of paraplegia. The skull is enormously thickened, and so soft that it can be readily cut with a knife. Projecting into the orbit is a fleshy tumour connected with the last molar tooth, which upon examination was found to consist of fibrous tissue with calcified patches, and some myeloid cells. The other orbit was affected in precisely the same way, and there were two smaller tumours, one on each side, in the lower jaw. A second rickety bear presented the same tumours. When animals are cured of rickets the bones become sclerosed, and the same process takes place with these soft odontomes, and then they resemble one recognised form of odontome. Mr. Sutton places these fibrous tumours, in his classification of odontomes, under the heading of cementomata. Many of these tumours have no fully formed tooth, perhaps only a denticle or a few myeloid cells, but if they arise from the tooth follicle he considers them odontomes. He believes that some fibrous tumours of the jaws in man are of this nature, and are associated with rickets, and in confirmation referred to two specimens in the College of Surgeons' museum presented by Mr. Christopher Heath and Mr. T. Smith.

ENGLISH INLAND HEALTH RESORTS.

WITHIN the last few years a greatly increased patronage has been extended, especially during the winter months, to many of our inland health resorts. This is owing to many causes, the chief, no doubt, being the improved facilities offered by the railway companies in running fast trains, and bringing them within reach of an easy journey from London; so that those who are prevented from taking their families abroad on account of business ties are able to settle them in some suitable health resort only two or three hours' journey, at the most, from London. Another reason, too, for the increase of winter visitors to such places as Bath, Leamington, Cheltenham, and Malvern is that many patients find that these inland health resorts suit them better than a winter spent at the seaside; and this is not altogether fancy, as undoubtedly some invalids find sea air too stimulating, and never feel quite well when under its influence. Among the most deservedly popular, apart from the attraction of the mineral waters, is Bath. This city, with its splendid service of express trains, which perform the journey from London within two hours and a quarter, has not hitherto received the attention it deserves as a health resort, apart from its use as a bathing place. Yet it presents a great variety of climate, from the close, muggy, vaporous air of the city to the breezy heights of Lansdown or Claverton. Even between these localities there is a great difference, the air of the former being soft and genial, the other keen and bracing. Intermediate between the relaxing air of the town and the tonicity of the downs, a variety of climatic conditions can be obtained in the different suburbs, according to their aspect and the degree of shelter they derive from the surrounding hills. Malvern has also come into great favour as a winter residence with those who require a bracing as well as a genial air, whilst it has many attractions as a place of residence. Besides these older health resorts, younger ones are springing up. Already many of the small towns and villages round Dartmoor are becoming too strait for the visitors who seek its pure and invigorating breezes. Clifton, after a long period of decadence as a health resort, is again finding favour; and Woodhall Spa, with its new hotel and excellent bath accommodation, with the additional attraction of being in a good hunting country, is getting better known, and is receiving a constantly extending patronage.

ENTERIC FEVER AND COW DISEASE.

THE occurrence of enteric fever in the human subject as the result of a disease in the cow, and transmitted through the agency of milk, has been asserted as an actual fact from South Africa, and even in this country much doubt has in some cases arisen as to whether a similar result has not been brought about. Dr. William F. Murray, health officer to the burgh of Forfar, contributes the latest account of an outbreak bearing on this subject. He heard of enteric fever in a dairyman's family outside Forfar in April of last year, and precautions were taken to prevent any milk contamination through human agency. But, notwithstanding this, cases of enteric fever occurred in Forfar early in May, and it was ascertained that they were without exception limited to the customers of the dairy in question. On further inquiry, the dairyman admitted that three of his cows had been suffering from a disease having the meaningless name of "stiffness," and that this disease

existed before the occurrence of enteric fever in his family. Dr. Murray states that he has long since been driven to hold the view that illness in the cow or some changed condition in the milk itself has been a cause of enteric fever in man, and he considers the mere fact of cases occurring in the dairy itself affords rather a confirmation than a refutation of this theory. Indeed, he says that "the people coming into direct contact with the diseased cows, and using the milk, would most likely be first affected." As to the use of the milk, we do not quite see why there should be priority of attack amongst consumers of it at the dairy; and, having regard to the extreme importance of the subject, we should have been glad to have had a more detailed report of the occurrence, especially as regards dates of attack, both of those who came into contact with the cows without using the milk and of those who drank it. With our present experience as to milk as a vehicle of disease, we should have thought that if the cause was a cow malady the consumers of the milk both in and beyond the precincts of the dairy would have been simultaneously attacked.

FINES FOR ADULTERATION.

DR. SEDGWICK SAUNDERS, the medical officer of health and public analyst for the City of London, has again, in his annual report, which we noticed briefly in our last issue, drawn attention to the inadequate fines imposed on tradesmen convicted of adulteration. Perhaps in consequence of his vigorous protest things have improved a little in the City, for two fraudulent milk vendors were fined £2 and £3 respectively, with costs, whereas the average penalty throughout England and Wales was less than 20s. Considering the profits gained by adulteration, the small extent of notoriety which the fraud entails, and the serious danger and injury to the community which are involved, we think the magistrates err too frequently on the side of lenity. The milkman who waters his milk is a rogue who is dangerous to society, and above all to children; and to punish him, in the absence of extenuating circumstances, with a fine of a few shillings is to encourage him to persevere, and to bring the law into contempt. In the words of the Local Government Board return, quoted by Dr. Saunders, such fines "can scarcely be considered as in any high degree deterrent, considering the large profits of adulteration."

TREATMENT OF PYORRHŒA ALVEOLARIS.

PATHOLOGICALLY, osteo-periostitis (pyorrhœa alveolaris), writes Dr. Cruet in the *Revue Odontologique*, is characterised fundamentally by molecular disintegration and progressive absorption of the alveolus, resulting in the separation of the gum from the teeth, suppuration, and purulent collections, and at length dropping out of the teeth should the disease not be arrested. Concomitantly there is an accumulation of tartar in more or less quantity, which is, however, of secondary importance. A point worthy of note is that separation of the gum from the teeth, or "pockets," almost always occurs, and is most developed upon the buccal or labial aspects. Of the three principal manifestations of the disease—absorption of the alveolus, separation of the gum from the teeth, and suppuration,—it is found that if one (the pocketing) can be cured, suppuration will cease, and the absorption of the alveolus be arrested. Dr. Cruet's method consists essentially in making a V-shaped section of the gum, the apex directed towards the crown of the tooth. One blade of a pair of straight scissors is inserted between the gum and the tooth as far as the bottom of the pocket, and a vertical cut made, and then with curved scissors the sides are pared, removing the whole of the loosened gum. The galvano-cautery is then applied to the edges, and antiseptic applications made. The operation is performed upon all the affected teeth successively, and several cauterisations are frequently necessary. The cure is generally rapid, and is completed in a week or a fortnight, the tooth remaining partly denuded of gum, but firmly implanted. The *rationale* of this method of treatment rests upon the simple observation that the gum, once separated from the teeth by alveolar absorption and suppuration, never resumes its vital connexion with the root, no matter what means are employed; also the suppuration is partly caused by the irritation of the loosened gum rubbing against the tooth; besides which, the pocket is a field eminently favourable for the development of micro-organisms, and is a veritable centre of infection.

CHILDREN'S HEAD-GEAR.

A SUDDEN return of frost at a period when east winds are expected renders it necessary that attention should be devoted to the clothing of children; the occasional brightness of sunshine is but too apt to encourage brisk movements with resulting perspiration, and if the child is not sensibly clad, there is then considerable risk from rapid cooling of the surface from evaporation. There is much room for improvement in the head-gear of both girls and boys. Custom or fashion decrees that it is improper for boys while infants to wear the warm woollen hoods which are such sensible and comfortable coverings for baby girls. A small round hat is substituted, and, the ears being left entirely unprotected, much cold and discomfort result. All this might be obviated by the mere sacrifice of fashion to common sense. When the children are somewhat older, the girl is more to be pitied than the boy, for her hood grows out of all proportion, and she is but too often doomed to struggle under an enormous superstructure of plush and wire, which catches the wind like a sail. The light woollen hood might be used for both sexes, and in the case of girls it might, being largely conducive to health and comfort, continue to be worn for years longer than is customary at present.

THE TANNIN TREATMENT OF PHTHISIS IN BRUSSELS.

DR. E. HOUZÉ of the Hospital St. Jean, Brussels, after having tried the tannin treatment on all his phthisical patients for the last year and eight months, states as the result of his observations that it gives excellent results in all stages of the disease, and especially in the condition where cavities exist. Indeed, he has no hesitation in declaring that of all the different kinds of treatment for phthisis which he has tried this has given by far the most encouraging results. The dose he employs ordinarily is fifteen grains, which quantity is taken three times a day. It is, as a rule, well borne; where this is not so, it is ordered to be taken with meals. After the first few days the expectoration and the sweats diminish, the cough decreases, and in many cases the appetite undergoes a marked improvement. The majority of the patients suffered from some slight degree of constipation, though in some this feature was sufficiently marked to require treatment; while others, again, suffered from diarrhœa. The character of the expectoration changed for the better, the sputa becoming white and frothy instead of green and firm. In some cases the diminution of the expectoration was followed by increased dryness of the cough, so that the patients complained that it fatigued them more; this was easily remedied by prescribing a few spoonfuls of syrup of codeia. The physical signs underwent a remarkable change for the better, at least those depending on auscultation, moist râles giving place to dry rhonchi, and large gurgling râles decreasing progressively until they gave place to mere blowing respiration.

These changes were evidently due to the drying up of the cavities, in consequence of which the hectic present in many of the cases vanished, the patients increasing considerably in weight and gaining strength in a remarkable manner. The percussion signs were not found to undergo so marked a change as those dependent on auscultation, but even here some improvement could be detected. No bacteriological observations were made.

OPENING OF THE MEDICAL SESSION AT THE ROYAL NAVAL HOSPITAL AT HASLAR.

DR. REID delivered the opening address to the course of naval hygiene, given annually in this hospital. There were present the Director-General of the Naval Medical Department, all the medical officers of the hospital, and several visitors, among whom were three former assistant surgeons, Sir Andrew Clark, Sir Joseph Fayrer, and Sir Dyce Duckworth. The address was listened to with the closest attention, and in scope and purpose, in design and execution. in felicity of language and fertility of illustration, and in an impressive seriousness of manner, the lecture was admirable. After the lecture a *déjeuner* was given in the public mess-room, and was presided over by Inspector-General Breakey. Speeches were made, and a great day at Haslar was brought to a happy end. The Director-General, finding that Lady Clark had accompanied Sir Andrew to Gosport, invited her ladyship to the *déjeuner*, and she had the honour of being the only lady present.

THE HEALTH OF TWO CROYDONS.

A STATEMENT recently appeared in a trade journal to the effect that "the death-rate is so abnormally high at Croydon that the Life Assurance Companies have instructed their Agents to issue no more policies." Inquiry appears to have elicited the fact that the Croydon here referred to is some obscure colonial Croydon; but the health authorities of our well-known Surrey borough have thought it desirable to give publicity both to the possibility of misconception to which the statement might give rise, and to the exceptionally low death-rate that has recently prevailed within their urban sanitary district. The death-rate in the Surrey Croydon, which was 14·5 and 14·7 per 1000 in 1886 and 1887, declined to 13·2 in 1888; and the mean annual death-rate in those three years was 14·1, against 18·7 in what Dr. Farr named Greater London—that is, within the area of the Metropolitan and City Police districts.

THE BEST MATERIAL FOR TRACHEOTOMY CANNULAS.

AS was pointed out by Dr. Zaleski in an article published in THE LANCET of April 28th, 1888, tracheotomy cannulas made of silver, the usual material, if allowed to remain for any length of time in contact with the secretions of the air-passages, become gradually dissolved and absorbed by the tissues, producing sometimes the well-known discolouration and even the more serious symptoms of argyria or silver poisoning. Dr. Zaleski, who is now Professor of Chemistry in the new Siberian University of Tomsk, has more recently made a number of observations with the view of determining how far aluminium is suitable as a substitute for silver. As aluminium is known to be freely acted upon by alkalies, it was to be expected that the secretions of the air-passages, which are usually alkaline, would not be without their effect on cannulas made of this metal; and so indeed it proved, for Professor Zaleski introduced small portions of aluminium into the air-passages of cats, and after leaving them there for a few weeks removed them, and detected a very appreciable loss of substance, the surface in many cases having become quite spongy. The same results were observed when the aluminium was left in the peritoneal and pleural cavities or inserted under the animals' skin. Again, experiments conducted in the chemical laboratory with the fluids and secretions of the human body, such as saliva, mucus, bile, lymph, sanguinolent exudation, &c., all proved the solubility of the metal in these fluids, the best solvents of this class being pus, ichor, and putrid and decomposing animal fluids. The chemical processes consist first in the formation of aluminium hydrate, and then in the gradual solution of this, which coats the surface of the metal, an organic albuminate being thus produced. Doubtless there occurs a deposition of some compound of aluminium in the tissues as in the case of silver, but as light does not act on aluminium compounds, and as no sufficiently delicate chemical tests are known for detecting this deposition, Professor Zaleski has not been able to demonstrate its existence. Sufficient, however, has been said to show the unsuitability of aluminium for the construction of such instruments as tracheotomy tubes. The next point is to consider what substance is the most suitable for their construction. From a chemical point of view, gold, platinum, ivory, rock crystal, and glass would appear to be unobjectionable, as they are only soluble to a very minute extent. Some of these substances are, however, too heavy, and others are extremely difficult to work, to say nothing on the score of expense. The conclusion arrived at by Professor Zaleski is that the best material is silver very thickly gilded.

UNQUALIFIED ASSISTANTS.

WE are glad to find that coroners are becoming active in decrying practice by legally unqualified men. Quite recently Mr. D. Wightman held two inquests in which the parents of deceased children were proved to have called in as they supposed properly qualified medical attendants; but, as it turned out, in neither case could a certificate of death be given by the *soi-disant* medical man, as the law forbids registrars of death to accept such certificates from other than legally qualified practitioners. It is a crying evil that poor and unsuspecting persons should have to pay for professional attendance in ignorance of the fact that the persons called in are not by law entitled to recover their charges or to sign death certificates. If medical men employ assistants without diplomas they ought to be compelled to explain to intending patients the status of the gentleman whom they depute to act for them. Medical men have to pay dearly for their education and registration, and it is only just that they should be protected, in the same way as solicitors are, against the depredations of "quacks" and novices. Moreover, it is monstrous that the community should be taxed with the expenses of coroners' inquests simply because individuals choose to act as medical practitioners, and take fees as such without a legal licence to do so.

INQUESTS WITHOUT MEDICAL EVIDENCE.

IN the past we have over and over again insisted on the necessity of a post-mortem examination being made in cases where the deceased was not seen alive by a medical practitioner; and even then when the information he can gather is insufficient, in his opinion, to warrant him in giving a certificate of the cause of death. Recently our attention has been drawn to more than one case in which a coroner has allowed juries to return verdicts as to the cause of death in cases where the deceased had not been seen during life by a medical man. The above practice seems to us to be all the more unsatisfactory where the lives of young children have been insured. A coroner is quite justified in exercising his judgment, but he should take care that his decisions do not run counter to common sense.

EMPTYING THE BLADDER BY MANUAL COMPRESSION.

DR. JULIUS HEDDAEUS, of Idar, has found manual compression of the bladder an admirable substitute for catheterism in a considerable number of cases where mechanical aid of some kind is imperatively called for. He employs two methods, which may be used alternately, so as to give relief to the hands when they get tired. In the first method the surgeon stands by the side of the patient, who lies on his back. Looking towards the patient's face, he lays the right hand on the left, puts the thumbs together, and then grasps the bladder so that the thumbs lie close to the symphysis, pressure being made, of course, downwards and backwards, and the thumbs being gradually approximated to the little fingers. In the second method, the back is turned to the patient's face and the bladder grasped with the hands placed with their ulnar borders against Poupart's ligaments, the finger tips meeting over the pubes. In the first method the chief work falls on the thumbs, in the second on the fingers. The latter is especially applicable in cases where the bladder is only partly full. Manual compression must only be employed very lightly in cases where the bladder is over-distended, and where there is any inflammation or pain it is altogether contra-indicated. It is mainly useful where there is paralysis of the muscular coat of the bladder, whether with or without further paralytic affections. When the sphincter is paralysed, so that incontinence exists, this method may be employed for emptying the bladder after it has partially filled, so as to prevent the constant dribbling. One advantage of the manual method is that it may be safely taught to the patient's attendants in many cases, and thus the bladder may be emptied at stated times, and as frequently as the surgeon thinks requisite.

FALLACIES OF STATISTICS.

THE fallacious deductions which can be drawn from a consideration of statistics are well exemplified in some remarks recently published upon the influence of tobacco-smoking upon diphtheria. It was shown from statistics by the Vienna municipal authorities that in the last three years the number of women affected by diphtheria was three times greater than the number of male adults, and from these premisses the rash conclusion was drawn that tobacco-smoking was to a considerable extent a prophylactic against diphtheria. The use of tobacco is not, however, the sole or the most important difference. It is obvious that the mothers spend more time with children, and that they are especially liable to infection during the watchful nursing of a sick child. It is also equally clear that, as a rule, the occupations of the female sex keep them more strictly confined to perhaps unsanitary houses, while the males leave these ordinarily to work in factories or in the open air. The probable influence of these conditions must be reckoned with before credence can be given to the prophylactic action of tobacco based upon statistics rather than experiment.

CARDIO-VASCULAR NUTRITION AND SUDDEN DEATH.

A REPRINT from the *Practitioner* on "Cardio-vascular Nutrition and its relation to Sudden Death," by Dr. F. W. Mott, lecturer on physiology and medical registrar to Charing-cross Hospital, is an able contribution to a most important practical subject. A striking analogy is held to exist between degenerative changes in the aorta and those affecting the heart. Both result from imperfect nutrition, induced by overwork and inadequate blood-supply, and this whether brought about by peri-arteritis or by endarteritis of the coronary vessels. The subendothelial structures suffer first, both in the aorta and coronary arteries. The disturbance of the circulation in the vasa vasorum produced by syphilis and Bright's disease is the source of the changes in the arterial wall. The real explanation of the cardiac degeneration is to be found in the fact that the valvular lesion is merely a part of a general degenerative process of the cardio-vascular system. The coronary arteries are found to be sclerosed just as the valves are, or else some other cause ought to be detected to account for the failure of the nutrition of the heart's substance. Dr. Mott has, in all cases of atheroma, found inflammation around the small vessels of the sheath and the vasa vasorum. In one instance minute gummata were discovered. It is easy to believe that, just as the most remote parts of the heart undergo fatty degeneration from failing nutrition, the subendothelial layer of the inner coat will be the first to suffer from the effects of malnutrition when there is peri-arteritis of the vasa vasorum.

THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

THE resolution of the Royal Medical and Chirurgical Society to leave its familiar home in Berners-street for more extensive premises in Hanover-square says much for the confidence of its Fellows in the stability of the Society and in its future. The Society will, it may be hoped, receive a large accession to its roll when it takes possession of its more commodious quarters, where its admirable library will be suitably stored and more readily available for reference. The occasion is one which should lead to a revival of the scheme of twenty years ago, when it was contemplated to amalgamate the various societies meeting in Berners-street into one institution. The scheme at that time was very nearly carried into effect; yet when, in 1881, it was revived by Mr. Erichsen in his address on retiring from the office of president of the Royal Medical and Chirurgical Society (*vide* THE LANCET, 1881, vol. i., p. 385) no fresh movement took place. However, from remarks made at the Society last Monday and elsewhere, it is clear that the idea has by no means been permanently abandoned. The opportunity has now arrived for consolidating into an Academy of Medicine not only the Societies above alluded to, but others, such as the Ophthalmological and Neurological, which have sprung into being since the date of Mr. Erichsen's address. We hope to hear more of the scheme, which all interested in scientific medicine should cordially support.

THE SALT TAX IN INDIA.

THE increase in the salt duty in India was at the time of its imposition regarded as an injudicious measure. Salt is so important an article of diet that any step which discourages its employment is to be deprecated. Its use in the economy cannot be satisfactorily explained, but the evils which follow its disuse are none the less matters of common observation, and are beyond dispute. It is therefore to be regretted that the Under Secretary of State for India did not see his way to a more satisfactory answer to the question recently asked on this subject in the House of Commons. It is admitted that since the increase in the salt duty in India there has been a great diminution in the demand for the condiment. The large stock on hand at the time of the increase of the tax is said to account for this diminution. Sir J. Gorst said that the Government of India are closely watching the returns as to salt consumption, and that the earliest opportunity would be taken of abrogating the increase of the salt tax, to which assent had been given with much

reluctance. To impose a tax upon a necessity of life, and then to watch the returns, rather than to consider the effects upon health while these returns are in process of growth, appears in the highest sense impolitic. An increase in the price of salt must necessarily lead to diminished consumption among the poorer classes, which will in turn be likely to favour sickness, and this ought to claim attention, even though the Government is patiently "watching the returns."

FOREIGN UNIVERSITY INTELLIGENCE.

Berlin.—Professor Max Planck of Kiel, has been appointed to share with Professor Helmholtz the teaching in Physics.

Buda-Pesth.—Professor Victor Babes, the well-known bacteriologist, who had been given leave of absence in order to arrange the new Bacteriological Institute at Bucharest, having applied for an extension of leave, has been informed that he must either resume his duties in Buda-Pesth at once or vacate his chair.

Freiburg.—Dr. Max Schottelius, Extraordinary Professor of Hygiene, has been raised to the rank of Professor.

Halle.—It had been expected that a full Professorship of Hygiene, with an appropriate institute, would be shortly established here, as has been done in nearly all the other universities of the German Empire. Considerable surprise has therefore been expressed on the fact becoming known that the Budget Committee had struck out the sums proposed by the Minister of Education for these purposes. As hygiene is now one of the subjects required for the State examination, it is felt that any university where the teaching of hygiene is relegated to the background by being entrusted to extraordinary professors, or *privat-docenten*, without any really satisfactory apparatus, must necessarily be somewhat heavily handicapped in the general competition for students.

Marburg.—The Government have refused to find the funds for the complete instruction in hygiene.

Palermo.—Dr. V. Cervello, Professor of Physiology, has been appointed Professor of Clinical Medicine, his former chair being filled by the appointment of Dr. C. Mondino.

Würzburg.—Professor Bonnet, of Munich, has been appointed to the Extraordinary Professorship of Topographical Anatomy, lately held by Dr. Ph. Stöhr.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following eminent foreign medical men are announced:—Dr. Krukenburg, Professor of Comparative Physiology in Jena, suddenly, apparently by suicide (his manner had recently undergone a complete change, and it is thought that his mind must have given way); Dr. Chantrain, Physician to the King of the Belgians, at the age of eighty-five; Dr. Don Valeriano Herrera, one of the physicians of the Spanish Royal Household; Professor Soyka, of Prague.

THE death is announced of the Rev. J. G. Wood, F.L.S., the well-known naturalist. The wonders and the beauties of nature found in him an enthusiastic and intelligent exponent. No one, perhaps, in the present age was more diligent and successful, by his writings and lectures, in fostering, especially in the minds of the young, the love of the study of living things. Mr. Wood was the son of a surgeon at one time lecturer on chemistry at the Middlesex Hospital.

THE presentation of the testimonial to Mr. Henry Smith, Emeritus Professor of Surgery, King's College, will take place in the operating theatre of King's College Hospital, on Thursday, March 14th, at 4 o'clock. Mr. A. H. Napper, of Cranley, a former house surgeon, has consented to preside.

AS we stated in our impression of the 16th ult., page 349, the Secretary of State for War proposes to appoint, under the presidency of Earl Camperdown, a small committee to consider and report generally on the pay, status, and conditions of service of the medical officers of the army and navy, and has invited the Presidents of the Royal Colleges of Physicians and Surgeons to nominate gentlemen to serve on the committee. As already announced, Mr. Macnamara was selected as the representative of the College of Surgeons; and the President of the College of Physicians has, we learn, now nominated Dr. T. Graham Balfour to serve on that committee on behalf of the College in Pall-mall.

WE are informed by the Registrar of the General Medical Council that the "Medical Register," the "Dentists' Register," and the "Medical Students' Register," for the current year, will be published on Saturday, the 9th inst. (this day).

DR. W. BALLS-HEADLEY, of Melbourne, has been elected President of the Medical Society of Victoria.

Pharmacology and Therapeutics.

THE HYDROFLUORIC ACID TREATMENT OF PHTHISIS.

IN a paper read before the Buda-Pesth Medical Society a short time since, Dr. Ludwig Polyák gave an account of some trials he has been making of the hydrofluoric acid treatment of phthisis. Care was taken to eliminate as far as possible the disturbing influence of climate by selecting only patients who had been for some considerable time in Görbersdorf, where the investigation was carried out. Again, all the five cases treated were in a tolerably stationary condition, but none were taken in which tubercle bacilli were not distinctly present in the sputa. Altogether, each patient was given from forty-five to fifty inhalations. At first, only fifty litres of impregnated air per patient were admitted into the room during the sitting of an hour's duration. This amount was gradually increased until during the later sittings as much as five or six hundred litres per patient were admitted. The subjective sensations seem to have been very disagreeable, for all the patients complained of a smarting sensation in the eyes, the nose, the pharynx, and the chest, which last is described as a somewhat severe pain. The cough and the expectoration also increased, and in more than one case hæmorrhages occurred. Again, all the patients complained of headache and loss of sleep. The physical results were as follows. In every case the bacilli increased and the condition of the lungs became worse; in four cases the body weight decreased from half a kilogramme to three kilogrammes, increasing only half a kilogramme in one case, where, however, the other symptoms had undergone a change for the worse; in three cases the exacerbations of temperature increased to a very marked extent; in four cases the vital capacity diminished; and in the remaining case, though it increased a little, the infiltration of the lung augmented very decidedly. From the above it would appear that, so far from exercising any beneficial influence on the course of the disease, the inhalation of hydrofluoric acid proved hurtful in every one of the five cases in which it was tried.

ARECA NUT AND ARECOLINE.

From some investigations recently reported to the Berlin Chemical Society by Herr Jahns, it would appear that the areca nut or betel nut (areca catechu) contains three alkaloids. Two of these, which have been named arecoline and arecaine, have been studied closely. The former is a colourless, volatile, oily liquid, of strongly alkaline reaction, soluble in all proportions in water, alcohol, ether, and chloroform. Its salts are easily soluble, some of them deliquescent, but mostly crystallisable, the hydrobromide crystallising most perfectly. Arecaine, on the other hand, while freely soluble in water and in dilute alcohol, is insoluble in ether, chloroform, and benzol. The aqueous solution is neutral and has a slightly perceptible saline taste. It combines

with acids to form crystalline salts, which are freely soluble in water. The third alkaloid was not closely examined owing to the small amount procurable. Arecoline appears to be the physiologically active constituent of the areca nut, and its actions upon animals have been reported upon by Dr. Maumé of Göttingen, who used for this purpose the hydrobromide and the hydrochloride. The symptoms of poisoning observed after subcutaneous or intravenous injections corresponded in many respects with those resulting from muscarine. The most dangerous action consists in the slowing of the heart's action by small doses, or even its stoppage. Subsequent injection of atropine removes this influence. Small doses cause a considerable increase in the number of inspirations; larger doses cause a slower action, with intensified expiration; and very large doses rapidly stop the breathing. After intravenous injection of a lethal dose the respiration usually ceases before the action of the heart. In dogs the subcutaneous injection of fifty to seventy milligrammes gave rise to tetanic spasms; this quickly gave place to a partial paralysis, which passed off with vomiting and liquid evacuations. Although it causes well-marked contraction of the pupils, this is ordinarily attended by so much disturbance of the heart and respiration in animals that its effect upon the human iris has not yet been tested. It would appear from the experiments that the organism may become gradually tolerant to the poison of the areca nut. Dr. Maumé concludes that arecoline hydrobromide is capable of being utilised therapeutically on account of its effect on the peristaltic action of the bowels, and on entozoa, and also in suitable combination as a cardiac remedy.

PHENACETINE AND ANTIPYRINE.

Professor Masius of Liége has communicated to the Belgian Academy of Medicine the results of a somewhat extended trial of phenacetine which he has been making in his wards during several months past. In fevers of all sorts a reduction of temperature could generally be obtained by suitable doses; usually a dose of from fifty to seventy-five centigrammes was sufficient for this purpose; it was found that the same effect could not be produced by smaller quantities, even when given repeatedly. Two grammes during the twenty-four hours sufficed to keep the temperature down. The patients said that they felt a great deal better as the temperature fell; the pulse, too, became slower and stronger, and appetite and sleep returned under the influence of the drug. M. Masius also employed phenacetine as an analgesic not only in rheumatic, but in various other cases, with considerable effect. He did not, however, find that in this respect it was equal to antipyrine. It has been claimed for phenacetine that it has several advantages over antipyrine, such as more rapid action and an absence of disagreeable secondary effects, but according to the experience of M. Masius, though it is true that the lowering of temperature is more rapid than with antipyrine, it is of much shorter duration, besides which there is a liability to the occurrence of rigors and cyanosis, and neither its antithermic nor its analgesic action is so well marked as that of antipyrine. It has certainly the advantages of not disordering the digestion and of being cheap.

CHLOROFORM AS AN INTERNAL REMEDY.

Dr. Stepp of Nürnberg, noting the observations of Salkowski on the disinfecting power of chloroform water, determined to make trial of chloroform internally in a considerable number of diseases. It may here be remarked that the use of chloroform in aqueous or spirituous solution is less common in Germany than in this country, where the familiar so-called "æther chlor." forms a portion of a very large number of prescriptions. In gastric ulcer Dr. Stepp gave chloroform (fifteen grains in a five-ounce bismuth mixture) with great effect, and believes this to be due to its disinfecting, astringent, and stimulating properties. In various affections of the mouth and throat—as follicular pharyngitis, catarrh of the pharynx, gingivitis, and diphtheria—washes and gargles containing chloroform proved very beneficial. In one case of severe psoriasis of the mucous membrane of the mouth, which had been unsuccessfully treated by several medical men, chloroform water effected a complete cure. Two cases of pneumonia treated with chloroform did so well that Dr. Stepp means to make a further trial of it in this disease. Perhaps the most encouraging results were obtained in cases of typhoid, though only six of these were thus treated. The value of chloroform in some cases of fever was, we believe, shown some twenty-five years ago in the Dublin hospitals, but it has never come into general use even in this country as an antipyretic.

NEW ANTIDOTE FOR MORPHINE.

Professor Bokai of Klausenberg believes that the best antidote for morphine is picrotoxin. The two substances act in an opposite manner on the respiratory centre, morphine paralysing its action, while small doses of picrotoxin increase it. As in poisoning by morphine death occurs from paralysis of the respiratory centre, and as picrotoxin hinders this paralysis, it follows that picrotoxin is likely to be of real use in morphine poisoning. In morphine poisoning, diminution of the blood-pressure plays an important part, but picrotoxin enjoys the property of stimulating the vaso-constrictor centre of the medulla and thus counteracts the effect of the morphine. Once again, the action of these two substances on the cerebral hemispheres is also of an opposite character. As atropine, the only known antidote of morphine, cannot be administered in large doses, it is certainly desirable that other means of combating morphine poisoning should be sought for. Professor Bokai thinks that picrotoxin may be useful as a substitute for preparations of nux vomica, and he also believes that it will be found of value in preventing chloroform asphyxia.

REPORT OF THE LANCET
Special Sanitary Commission
ON THE
CHAIN AND NAIL MAKERS OF CRADLEY HEATH AND NEIGHBOURHOOD.

PART I.

THE condition of the chain and nail makers at Cradley Heath and neighbourhood has been the subject of public commiseration for some years past. Many newspaper articles have appeared describing the sufferings of the men and women who make nails and small chains. At congresses and various meetings of representative working men eloquent speeches have been delivered on the subject, and the grievance has found echo—a noisy echo—in the House of Commons. Under these circumstances the House of Lords Commission on the Sweating System, having extended its investigations to the provinces, naturally included the chain trade and Cradley within the scope of its inquiry. But though so much has been said on this phase of the industrial problem, the matter has not yet been treated from a sanitary point of view, which will be the special purpose of the present report. Nevertheless, it must be recognised at the outset that the economical and sanitary problems are inextricably connected. For this reason we have been led to seek out and denounce the enforcement of the sweating system, believing such a system so reduces the rate of wages that it becomes physically impossible to maintain the health of the worker. Now among the chain and nail makers the sweating system prevails to a considerable extent. It has been very fully described by the able report of the labour correspondent to the Board of Trade, Mr. John Burnett, and need therefore be only briefly mentioned here. We will content ourselves with a short and general account of the trade, and then deal with the points that specially affect public health.

Dudley we found to be the centre of the nail and chain trade, though more work of this description is done in the surrounding villages—notably Cradley, Cradley Heath, Lye, Halesowen, Sedgley, Gornal, &c.—than in Dudley itself. All these villages consist of very small red-brick cottages, with numerous little out-houses behind. These latter might be taken for wash-houses or stabling for donkeys or cattle &c. They are in reality small smithies, where from two to twelve persons work, and where there may be from one to four or five forge fires with bellows attached. The worker stands by the fire with one hand on the handle of the bellows, and with the other pushes a rod of iron into the glowing braise.

When red-hot, the iron rod is placed on the anvil, a piece cut off, bent into the form of a chain link, or else it is beaten into a mould and gradually assumes the shape of a nail. Sometimes three persons work, one with the bellows, one at the fire, the other with the hammer and anvil. The work is light or heavy according to the thickness of the iron and the consequent amount of force required to lift it and beat it into shape. For instance, a piece of iron an eighth of an inch thick can be beaten out to make the point of a nail with much less effort than is required for the spike nails that measure three-quarters of an inch in thickness. Where many and heavy blows are required, a hammer worked by a treadle is used. This varies from ten pounds to thirty pounds in weight, and is called an "Oliver." In the making of spike nails the treadle is pushed down so as to work the Oliver hammer from 1200 to 1500 times in the day; then the hand hammer is also used and the bellows blown. It is hard, exhausting, physical work, and yet women labour at this from week's end to week's end.

Apart from the actual work, it is necessary to fetch the iron and to carry back the chains or nails that have been made. It is in this distribution of the work that the sweater puts in an appearance. The wrought-iron master has his warehouse, whence he gives out the iron, and where he receives it back when wrought into chains or nails. It is to his advantage to deal with as few persons as possible. It saves time and avoids complicated bookkeeping. Thus it is not difficult for a worker to obtain very much more work than he himself can possibly accomplish. He therefore hands over what he cannot do himself to others, with whom he subcontracts. In these transactions false weights are sometimes used by the sweater, and all manner of devices practised, by which he "sweats" a profit out of other people's work. So skilful have these intermediaries or subcontractors become in the art of deception, that they are known in the Black Country, not as sweaters, but as "foggers." Thus it often happens that the actual worker does not receive the scale price for the chains or nails he produces, but only what the "fogger" or intermediary who has brought him the work from the iron-master chooses to allow. Many workers, however, go themselves to head-quarters and obtain employment direct from the warehouse. But this, again, has the disadvantage of necessitating a great loss of time, and the carrying about for long distances of very heavy weights. Nevertheless, as even the highest scale of remuneration is not enough to enable the workers to live healthy lives, the first necessary reform is to do away with the sweaters or "foggers," whose intervention tends to reduce the wages actually received. Co-operative enterprise might here render considerable service by creating warehouses managed in the interest of the workers themselves.

In this, as in most other trades, it is difficult to ascertain with absolute precision the amount of wages earned. At a meeting of about a hundred men and women engaged in making spike nails the question was asked, in our presence, whether any woman present had earned 7*s.* in a week. There was no answer. From 3*s.* 6*d.* to 4*s.* 6*d.* a week was the general figure. When the men were asked whether any of them had earned 15*s.* in the week, one man only replied; but on inquiry it was shown that he had been labouring till 1 o'clock at night, and had, in fact, done the equivalent of nine days' work in the week. On the other hand, if the master's wage books were examined, a much more favourable impression would be produced. But then no account is taken of the hours worked, of the braise consumed, or of the tools worn out. Thus we called on one man who received in wages 35*s.* a week, but his household consisted of ten persons, and his daughters, though quite young, as well as his wife and sons, helped him at the work. The braise alone which he consumed on his various forges cost him 6*s.* a week. As a result, one of his daughters, whom we saw working at the forge, was stunted, thin, pale, chicken-breasted, and altogether presented a haggard, worn-out appearance.

To insufficient pay, insufficient food, and overwork, we must add the want of proper sanitation. Starting from Dudley we rode through the village of Netherton—a journey that recalled the memory of bombardments and earthquakes. On all sides the earth had given way in consequence of mining operations. New houses as well as old ones were falling to pieces. Some were held up by huge piles of wood, others tied together by iron, while others had entirely collapsed, the roof having fallen in, and but one or two walls remaining. A new Board School is wanted for Netherton, but the authorities dare not attempt to build for fear the structure should collapse and injure the children. Fortunately the earth does not subside suddenly; the houses gradually crumble to pieces, and there is generally time for the inhabitants to make their escape before any very large portion of roof or wall falls in. With a soil that is thus constantly giving way, it is not possible to safely construct sewers. The levels change; the sewers would crack, break, leak, form syphons, and in other ways fail to act. Thus the inhabitants are condemned to surface drainage, and to ashpits or middens. Also it may happen that a house or cottage is built close to a field, on an elevated well-drained site. But in a little while the field, which was convex in form and above the level of the road, subsides, becomes concave in shape, receives the surface drainage of the neighbourhood, and is soon converted into a pond or lake, at least during the wet season. The neighbouring house or houses consequently become extremely damp. We have seen houses that were once high and dry, and yet on one side the outer wall has become a sort of embankment, with two feet deep of water against it. With the earth thus constantly moving, and mounds changing into hollows, anything like a general drainage scheme would be very difficult to apply, and such peculiar local circumstances must be taken as detrimental to public health. Apart from the question of drainage, many a house, cottage, and smithy, which was once sound and dry, has now become damp and draughty, with cracked walls, and ill-fitting doors and windows.

At Halesowen, where some 500 men, women, and children work at making heavy spike nails, we found a most miserable, depressed, underfed population. A strike had commenced, which fortunately lasted only during the day of our visit. We were not able to see the people at work, but had every opportunity of gazing on their poverty and rags. Some of the women and young girls were melancholy examples of physical deterioration. Yet nature intended this to be the most beautiful spot in the whole neighbourhood. It is a picturesque village poised on the crest of a hill, with its church spire tapering towards the sky. But at the foot of this hill there are many ruined cottages, while large surface drains fall in malodorous cascades into what was once a romantic brook. The slop water is simply thrown out of the houses and allowed to run anywhere or sink into the earth. The cottages have ashpits for closets; in one instance we found only two ashpits for ten houses, and this, we were assured, was not uncommon. One woman whom we met told us she had been working till one in the morning at the smithy making nails, and now she had to wash for all her family. At one smithy we found a man and woman at work. The former could earn 10*s.* and the latter 4*s.* 6*d.* a week, working from 6.30 A.M. to 7 P.M., and sometimes 9 P.M. One of the sons, as a coal-miner, earned higher wages, and therefore this family lived a little better than many of their neighbours, for they did sometimes have a little meat ("block ornaments") on week-days as well as on Sundays.

On another occasion we visited Old Hill, where we were able to converse with several nail-makers. The first, a man, earned 1*s.* 3*d.* a day of twelve hours, and worked five days a week, the sixth being devoted to getting his work to and from the nail-master's warehouse. His rent was 2*s.* 11*d.* per week, and his family, amounting in all to ten persons, had only two bedrooms between them. The women in this family often worked at nail-making till 9 P.M. Bread, potatoes, and a small piece of bacon were their chief articles of diet. They complained bitterly that some years ago they were able to earn almost double their present wages. Close by we inspected the bedrooms of another cottage. The front room measured about 15 ft. by 12 ft., and was 7 ft. 6 in. high. The back room was about 12 ft. by 8 ft., just big enough to hold a bed. Here slept the grandfather and grandmother with one little boy. In the front room slept the father and mother and five children, including a daughter seventeen years and a son fifteen years old. Such overcrowding and promiscuity of sexes among adult children is very common.

From Old Hill the distance to Cradley Heath is not great, and we now proceeded to this the most notorious district. Passing behind a row of cottages situated in the

main street, we found ourselves in a complicated maze of small smithies or workshops, separated from each other by passages about a yard wide. The yards between these groups of workshops and the dwelling-houses were well swept, but all the slops had been thrown on to the ground. They oozed out into the street, and soapsuds stagnated on the causeway. No sooner was our presence known than an excited and enthusiastic nail-maker took us into a smithy so that we might contemplate the forge and the anvil, where a woman usually worked. This was considered a great curiosity, for the young woman was so strong and so skilful that she actually earned 7*s.* a week. Thus the corner where she worked was looked upon with some reverence, just as we might be curious to see the laboratory of a Faraday, or the studio of a Millais. Seven shillings a week for chain-making! This was considered phenomenal; and in this workshop the women declared that they often toiled twelve and fifteen hours a day, and still they were not able to earn a living. "Where, then," we inquired, "do you get your living?" To which they angrily rejoined, "T'aint a living," and the bellows roared in a chorus, and down came the hammers on the red-hot iron, sending a blinding shower of sparks in all directions. The snow was on the ground, it was miserably cold, and the east wind blew into the smithy through numerous cracks in the walls or loosened tiles of the roof; but these women laboured so hard with the hammer and bellows that soon drops of perspiration stood out on their faces, despite the bitter winter weather.

REPORTS ON AFRICAN HORSE-SICKNESS.

IN 1886 Dr. Fleming, the able head of the Veterinary Department of the Army, obtained authority from the Secretary of State for War to send out to Africa an experienced veterinary surgeon to investigate the nature, causation, and prevention of the fatal disease known as "horse-sickness" in South Africa. The importance of the subject may be estimated from the fact that in 1887 very nearly one-third, and in 1888 upwards of one-tenth, of the horses and mules of the military force employed in Natal were cut off by this epizootic. Mr. Nunn, the officer selected for this special service, has returned to England, after having studied the disease for two seasons, and his reports are now published, with some introductory remarks by Dr. Fleming. It has hitherto been supposed that this very fatal disease was of the nature of anthrax, and it was hoped that, if this proved to be the case, "Pasteur's method of protecting animals against it by inoculation with cultivated virus might be made available in preserving those of the army, as well as those belonging to the colonists, from a pestilence which is not only serious from a military point of view, but constitutes a positive drawback to colonisation, sometimes sweeping off, as it does, nearly all the horses and mules over wide districts during the season when it prevails." We regret to say that Mr. Nunn's experiments have shown that the disease is not anthrax, and that, so far as has yet been tried, it has not been found possible to isolate the bacillus and adopt the Pasteur system of inoculation. But the report brings out some very interesting points connected with the disease, and directs attention to the important question of prevention by hygienic measures.

The horse-sickness prevails towards the end of the African summer and in the autumn. In 1887 the first case among the army animals occurred on Jan. 18th, and the last on June 21st; in 1888, the first case in Natal was on Feb. 13th, and the last on June 1st in Zululand. It appears to be confined to horses, mules, and asses, and, it is said, zebras and quaggas have been found dead, apparently from this disease. But in no instance has it been found to affect ruminant animals, and carnivorous animals which eat the flesh of horses that have died of it do so with impunity. It is not communicable from one animal to another, and cannot be reproduced by direct inoculation; nor has it in any instance been transmitted to man, though the farriers, while making post-mortem examinations, must have had scratches and cuts on their arms and hands. It prevails chiefly in low-lying malarious districts, rarely occurring in elevated localities, and horses in stables are not so liable to it as those kept in the open. Mr. Nunn believes the disease to be of a malarial character. Dr. Fleming says: "That it is also due to a specific germ there can be little doubt; and that this germ requires two conditions in which to develop its activity—the warmth of summer and the moisture to be found in low-lying situations—is also evident, as then it becomes active; whereas in cold weather it is in a latent or resting condition, and in dry situations it does not find a suitable home. It might even be said that it demands a third condition to favour its development—rank herbage, or vegetation of a certain kind, which facilitates the growth of grass." One attack of the disease does not seem, as in the case of anthrax, to secure immunity from its recurrence. Mr. Nunn notices a very remarkable circumstance in connexion with this disease. It was formerly as prevalent in the Cape Colony as it now is in Natal, but for the last thirty years it has been confined to a few sporadic cases. This change is attributed to "the introduction of sheep, which have eaten up the bush and so altered the vegetation that the germs of horse-sickness have disappeared."

The treatment of the disease has been markedly unsuccessful. Almost every drug has been tried, but from none has any appreciable benefit been derived. In 1887 the deaths amounted to 79 per cent. of the cases, and in 1888 all that were reported terminated fatally. The means of prevention now available appear to be—the removal, if practicable, of the horses to the high grounds during the months in which the disease is found to prevail, and, when this cannot be carried out, the stabling of the animals in suitable buildings, in which attention has been paid to hygienic conditions, care in housing them before sunset and till well after sunrise, and special attention to the nature and quality of the food and bedding at such seasons.

Mr. Nunn is entitled to great credit for the careful and intelligent manner in which he has conducted this important inquiry. Although he has not succeeded in solving the very difficult question he was selected to investigate, he has done good service in clearing the way for further investigation, and has collected information which should prove useful in securing in the meantime the adoption of prophylactic measures which may tend to diminish materially the destructive influence of this scourge. We regret to observe that in the tables appended to his report Mr. Nunn has omitted to state the strength of horses and mules of the different corps and at the various stations. In estimating the loss caused by the disease, we have been obliged to take the strength on Jan. 1st in each year as stated in the Adjutant-General's annual returns. We trust that in any future inquiry this information may be given.

MEETING OF FELLOWS AND MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following resolutions, carried unanimously at the meeting held on the 28th ult. (which were given in abstract form in our issue of last week), have been officially supplied to us by the hon. secretaries of the Association of Members of the Royal College of Surgeons of England:—

1. That this meeting of the Fellows and Members of the Royal College of Surgeons of England views with regret the refusal by the President and Council of the College of the reasonable request of the honorary secretaries of the Association of Members of the said College to hold a meeting of the Fellows and Members within the College.

2. That the Draft Bill presented to this general meeting of the Fellows and Members of the Royal College of Surgeons of England be referred to a Committee who shall take steps to promote the Bill in Parliament, and shall have power to accept or make reasonable modifications therein, and to convene an adjournment of this general meeting by advertisement in two medical papers at any time and place they may select, should they think fit.

3. That the Committee referred to in Resolution 2 consist of the following gentlemen: Robert Collum, M.D., W. A. Elliston, M.D., Joseph Smith, Samuel Smith, George Danford Thomas, M.D., Dr. Macdonald, Lawson Tait, F.R.C.S., R. Davy, J. Tweedy, C. M. Jessop, Warwick C. Steele, M.D., W. Ashton Ellis, J. Holmes, G. Pollock, Sir Guyer Hunter, Sir William Moore, Dr. Farquharson, R. Abud, M. G. Biggs, G. H. Cable, W. G. Dickinson, T. Stretch Dowse, Ralph Gooding, E. Hartley, Jabez Hogg,

J. R. Kemp, J. W. B. Mason, C. Royston, W. Donald Smallpiece, John C. Smith, W. Wynn Westcott, with power to add to their number.

4. That this meeting of the Fellows and Members of the Royal College of Surgeons of England approves of the conduct of the central committee of the Association of Members of the said College in endeavouring to recover the lapsed rights of the Members of the College, and hereby resolves to support them in any legitimate steps they may take to assert the same.

5. That this meeting thoroughly approves and endorses the course taken by Messrs. W. C. Steele and W. A. Ellis in commencing proceedings in the Chancery Division against the President and members of Council of the Royal College of Surgeons of England.

6. That this meeting of the Fellows and Members of the College of Surgeons of England do now stand adjourned to a day and place to be named and fixed by the Parliamentary Committee this day appointed.

REFORM AT THE ROYAL COLLEGE OF SURGEONS.

A DRAFT BILL has been prepared on behalf of the Association of Members of the Royal College of Surgeons of England, having for its object to amend the constitution of the Royal College of Surgeons of England, and to declare and extend the rights of its Members. The Bill as drafted comprises some forty-one sections, and is prefaced by a preamble which recites that the Royal College has existed as a free corporation from very early times, and that it is expedient to declare and regulate the ancient rights of Members, to amend the constitution of the College, to provide certain new regulations relating to its government in lieu of, and in addition to, existing regulations, and to amend and alter certain bye-laws.

Then follow the enacting clauses, of which the substance is as follows:—

1. Members of the Council to be elected for three years only, but to be re-eligible at the expiration of their term of office. 2. The president and vice-presidents to be elected for one year only, but to be re-eligible subject to the condition of not continuing in office for more than three years consecutively. 3. Any Member of the College duly registered and of more than twenty years' standing on the day of election may be nominated for the post of president or vice-president. 4. Members of the College are to be entitled (*a*) to meet within their hall or elsewhere for the consideration of the affairs of the College; (*b*) to propose resolutions and to vote thereon at every general meeting of the College; (*c*) to vote at any election of president, vice-president, and members of the Council; (*d*) at any meeting, to appoint committees for special purposes, and to adjourn any meeting to another time and place. Also it is provided that the previous permission of the president and Council shall not be necessary to the holding of any such meeting or the proposal of any business therein. 5. A general meeting of Members to be held twice a year, and a special general meeting to be called within one month of the receipt by the Council of a requisition signed by twenty Members. Special business to be notified in the advertisement convening the meeting. 6. President to be chairman of all meetings of Members and to take the sense of the meeting upon all resolutions proposed by any Member after three days' notice in writing and upon all proper amendments thereof. 7. Section 17 of the bye-laws to be repealed, and no penalties or liabilities to be enforced for its past infringement. (This section provides that no meeting or assemblage of Fellows or Members of the College shall be held in the hall or council house of the College or in any of its appurtenances, unless convened by or under the authority of the president or Council.) 8. Any resolution relating to expenditure of the revenues of the College, if passed at a general meeting of Members by a majority of two-thirds, to be binding on the Council and any Finance Committee. 9. Extraordinary expenditure of £1000 and upwards to be sanctioned at a meeting of Members convened for the purpose. 10. The College hall and museum, and all other College property, to vest in the president or Council in trust for the Members. 11. The meeting of Members to have no power to alter subjects or standards of examination, or to review any judicial act of the Council. 12. College accounts to be open to the inspection of any Member at all reasonable times. 13. A balance sheet to be prepared in October, and published, after audit, on or before Nov. 1st to the Members of the College. 14. An annual meeting to be convened in November, to receive the balance sheet. 15. New bye-laws and alterations in existing bye-laws to receive the approval of the Members assembled in meeting. 16. All Members to be eligible to the Council on the same conditions as to standing as Fellows. 17. Members to be eligible to any office in the College.

Then follow nine sections embodying a scheme of registration, and making registration a necessary qualification, and the only qualification of a Member proposing to vote at any election. The scheme of registration invests the secretary of the College with the powers and duties of the registrar, and provides for his preparing a list of Members, from which shall be omitted the names of such as (1) are dead or have ceased to be Members; (2) who have no permanent address in the United Kingdom; and (3) Members of less than a certain standing (not defined in the Draft), and a supplementary list of the names so omitted. These lists are to be published in the *London Gazette*, and in two medical papers. Further provision is made for the issue of a notice calling for corrections in this list, and their embodiment in the Electoral Register for the year ensuing. The Electoral Register, when published, is to be of conclusive authority.

The following twelve sections regulate the conduct of elections, and provide that—

27. The presidency, vice-presidency, and membership of the Council shall fall vacant on the first Thursday in July in every year. 28. President and vice-president to be elected by a majority of the qualified voters. 29. No fees payable in respect of election. 30. Notice of forthcoming election to be given in the *London Gazette* and two medical papers. 31. Nomination to be made by any Member in a scheduled form and with consent of nominee. 32. Exception to a nomination to be by way of protest signed by ten Members, and to be adjudicated upon by a special meeting of the Council. 33. Nominations to be advertised in the hall of the College, *The Times* newspaper, the *London Gazette*, and two medical papers, and notice to be given that ballot papers may be obtained from the secretary, and votes given either personally or by returning a ballot paper, duly filled up by a given date.

The five remaining sections of this division of the Bill relate to details of the conduct of the election and counting of the votes very much on the lines of the Ballot Act.

Then follow three sections relating to the election of examiners. Any Member not being a member of the Council is to be eligible for the office of examiner, and the nomination may be made by any ten Members within a limited time before the meeting of the Council at which the election is to take place. The election is to be by ballot, and the electors are to be members of the Council.

The Draft concludes with a section in blank which is to contain amendments of the bye-laws of the College.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

The Sanitary Condition of the Keynsham Rural District, by Dr. BLAXALL.—This report deals in much detail with certain occurrences of infectious diseases in the district, and with the sanitary circumstances and methods of administration with which they were associated. The report does not profess to discuss questions of etiology to any extent, but it would appear to have been so drawn up as to serve as a guide to the sanitary authority in their future action, and this especially in so far as preventable disease is concerned. Some very obvious sources of ill health appear to have been altogether overlooked by the authority; and whether sewerage, drainage, water-supply, excrement and refuse disposal, or other matters are considered, there is evidently much need for the application to the district of some of the most elementary lessons in public health. Indeed, Dr. Blaxall comes to the conclusion that the authority have utterly failed to comprehend the nature and the importance of the duties imposed on them by the Legislature; and even in the appointment of sanitary officers matters have been so contrived as to fail in securing real efficiency. The need for a properly appointed and adequately remunerated medical officer of health and inspector of nuisances is strongly set forth, and further recommendations are made as to the various sanitary matters which influence health in the district. The details of the report are, however, mainly of local interest.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Harwich Urban District.—On an estimated population of 9108, Dr. W. W. Hardwicke reports a death-rate for 1888 which, excluding deaths amongst visitors, was only 10·7 per 1000, and it is further satisfactory to note that there was no death from small-pox, continued fever, diphtheria, or diarrhœa. For absence of death from the last-named disease we may probably have to thank the cold and otherwise disagreeable season of last summer. Infant mortality under one year of age is calculated as amounting to 34 per cent. of the deaths; it is regarded as high, and due to neglect

and bad habits of parents; doubtless it could be reduced, but on the births the rate is shown to be 12·4 per cent., which, having regard to the corresponding rate for the country generally, is not very excessive. Harwich is said to have a good and abundant water-supply, and an efficient system of drainage; but it stands in need of a proper code of bye-laws for the regulation of new buildings and other matters.

Willesden Urban District.—Mr. Harrison Branthwaite commences his annual report with a somewhat complete account of the meteorological conditions which prevailed last year, and he gives the death-rate as 15·7 on a population estimated at nearly 53,000. During the year 199 cases of scarlet fever, 62 of diphtheria, and 43 of enteric fever were included in the diseases concerning which notification was received, and the annual zymotic death-rate is given as 2·94 per 1000, as opposed to 1·77 for England and Wales. But in this district, where the authority professedly want information as to preventable disease in order that they may check it, there is no proper hospital for the reception of the cases when heard of. The matter has long been under consideration, and there it apparently remains. During the year 306 notifications of infectious disease were received, and attempts have been made to send some odd cases to the London Fever Hospital, an establishment which certainly was never intended to help sanitary authorities to put off the performance of one of their most obvious duties. The intelligent inhabitants of Willesden should see that this matter is no longer neglected.

Ashton-in-Makerfield Urban District.—Owing in part to an epidemic of measles, the death-rate for this district in 1888 was in excess of the average. Some 400 cases occurred, with 21 deaths; and the general death-rate from all causes reached 20·1 per 1000 living. The occurrence of some cases of enteric fever led to the discovery of a number of conditions such as ill-made and unventilated drains, open and unroofed ashpits, insanitary privies, &c. All this has since been remedied; but we gather from the occurrence that a house-to-house inspection, with a proper record of all premises, is much needed. Where this work is done, it is found to lead to most important results as regards health, and, above all things, it to a large extent secures the abolition of such conditions as are here specified before, instead of after, the occurrence of preventable disease. Mr. Nathan Hannah, in concluding his report, draws attention to the need for properly making up certain streets, and for the abolition of the old-fashioned and filthy forms of middensteads which still remain in this town.

West Hartlepool Urban District.—The general death-rate for 1888 was 17·7 per 1000, and that from zymotic causes 2·1, the most fatal diseases of this class being whooping-cough and measles. Enteric fever only caused one death, but several cases occurred, and the inquiry into their causation leads Dr. Gourley to urge the continuance of such work as will secure the maintained efficiency, cleansing, and ventilation of the sewers. Scavenging is well carried out, and inspection both of the district and of dairies is maintained, but the need of a public slaughterhouse constructed on proper sanitary principles is strongly contended for, and great importance is attached to the subject in the interests of the health of the public.

Stroud Urban District.—Mr. T. Partridge has a death-rate of 13·0 per 1000 to record. He advocates hospital provision, but he brings under the notice of his authority certain temporary structures which, however useful for emergencies, have never been shown to serve the permanent needs of such a santary district. In the matter of drainage, Uplands and Pakenhill still require much attention. Uplands also remains without a proper water-supply, and in other places the supply is impure. New bye-laws are stated to be still under revision. Inspection of slaughterhouses, dairies, bakehouses, &c., is maintained.

River Tyne Port.—The annual report to the River Tyne sanitary authority shows that continued action is taken to secure the isolation of cases of infectious diseases arriving in the port, and to improve the accommodation and sanitary arrangements on board in such a way as to prevent as far as possible the occurrence of disease. The vessels arriving either directly or indirectly from infected ports were 234 in number, and these were all boarded at once and dealt with. Eleven patients were admitted into the floating hospital, and where necessary vessels and clothing were disinfected. Mr. Henry Armstrong, who has secured for this port a typically efficient administration, states that, whilst the amount of sanitary work done during 1888 will bear favourable comparison with that of previous years, it was not such as to call for any special comment.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 5592 births and 3604 deaths were registered during the week ending March 2nd. The annual rate of mortality in these towns, which had been 19·0 and 19·9 per 1000 in the preceding two weeks, declined again last week to 19·7. During the first nine weeks of the current quarter the death-rate in these towns averaged 21·0 per 1000, and was 2·8 below the mean rate in the corresponding periods of the ten years 1879-88. The lowest rates in these towns last week were 14·6 in Brighton, 15·3 in Cardiff, 15·6 in Hull, and 16·9 in Derby. The rates in the other towns ranged upwards to 26·3 in Newcastle-upon-Tyne, 28·0 in Plymouth, 28·4 in Blackburn, and 33·6 in Preston. The deaths referred to the principal zymotic diseases in these towns, which had declined in the preceding seven weeks from 644 to 392, rose again last week to 432; they included 186 from measles, 91 from whooping-cough, 50 from scarlet fever, 43 from diarrhœa, 40 from diphtheria, 22 from "fever" (principally enteric), and not one from small-pox. No death from any of these principal zymotic diseases was recorded during the week in Hull, while they caused the highest death-rates in Preston, Blackburn, and Salford. The greatest mortality from measles was recorded in Bolton, Birkenhead, Leicester, Blackburn, and Salford; from whooping-cough in Cardiff, Nottingham, and Preston; and from scarlet fever in Oldham and Blackburn. The mortality from "fever" showed no noticeable excess in any of these large towns. The 40 deaths from diphtheria in the twenty-eight towns included 25 in London, 4 in Salford, 3 in Manchester, and 2 in Oldham. No death from small-pox was registered in any of the twenty-eight great towns; and only 2 small-pox patients were under treatment at the end of the week in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital. The number of scarlet-fever patients on Saturday last in the Metropolitan Asylum Hospitals and in the London Fever Hospital was 616, against numbers declining in the preceding fifteen weeks from 980 to 643; 41 cases were admitted to those hospitals during the week, against 43 and 53 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 376 and 362 in the preceding two weeks, were again 362 last week, and were 141 below the corrected average. The causes of 87, or 2·2 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Portsmouth, Norwich, Plymouth, Wolverhampton, Derby, and Birkenhead. The largest proportions of uncertified deaths were registered in Sheffield, Hull, Cardiff, and Huddersfield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 22·3, 21·6, and 21·2 per 1000 in the preceding three weeks, rose again to 22·3 in the week ending March 2nd; this rate exceeded by 2·6 the mean rate during the week in the twenty-eight large English towns. The rates in these Scotch towns last week ranged from 15·0 and 17·8 in Leith and Dundee to 21·3 in Greenock and 27·8 in Glasgow. The 571 deaths in the eight towns showed an increase of 29 upon the numbers in the preceding week, and included 41 which were referred to measles, 24 to whooping-cough, 10 to diphtheria, 5 to diarrhœa, 4 to scarlet fever, 2 to "fever" (probably enteric), and not one to small-pox; in all, 86 deaths resulted from these principal zymotic diseases, against 61 and 80 in the preceding two weeks. These 86 deaths were equal to an annual rate of 3·4 per 1000, which exceeded by 1·0 the mean rate from the same diseases in the twenty-eight English towns. The fatal cases of measles, which had been 7, 23, and 22 in the previous three weeks, rose last week to 41, of which 37 occurred in Glasgow and 3 in Dundee. The 24 deaths from whooping-cough showed a decline of 7 from the number in the previous week, and included 19 in Glasgow, 2 in Dundee, and 2 in Greenock. The deaths from diphtheria,

which had been 8 and 14 in the previous two weeks, declined again to 10 last week, of which 5 occurred in Glasgow and 2 in Edinburgh. All the 4 deaths from scarlet fever, as well as the 2 from "fever," were returned in Glasgow. The deaths referred to the principal diseases of the respiratory organs, which had steadily declined in the preceding seven weeks from 160 to 112, rose again last week to 128, but were 25 below the number in the corresponding week of last year. The causes of 59, or 10 per cent., of the deaths registered during the week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 24·5, 29·4, and 31·0 per 1000 in the preceding three weeks, declined to 25·4 in the week ending March 2nd. During the first nine weeks of the current quarter the death-rate in the city averaged 28·7 per 1000, the mean rate during the same period being 19·8 in London and 19·2 in Edinburgh. The 172 deaths in Dublin, which showed a decline of 38 from the number in the previous week, included 8 from "fever" (typhus, enteric, or ill-defined), 4 from whooping-cough, 2 from measles, and not one from small-pox, scarlet fever, diphtheria, or diarrhœa. Thus the deaths referred to the principal zymotic diseases, which had been 12 and 14 in the previous two weeks, were again 14 last week; they were equal to an annual rate of 2·1 per 1000, the rates from the same diseases being 1·9 in London and 0·8 in Edinburgh. The deaths referred to "fever," which had been but 3 and 4 in the previous two weeks, further rose last week to 8, and exceeded the number returned in any previous week of this year. The fatal cases of whooping-cough exceeded by 1, while those of measles showed a decline of 3, compared with the numbers in the previous week. Four deaths from violence and 3 inquest cases were registered; and 57, or a third, of the deaths occurred in public institutions. The causes of 21, or more than 12 per cent., of the deaths in the city were not certified.

MORTALITY IN DUBLIN IN 1888.

The Registrar-General of Ireland has just issued his annual summary for 1888 of the mortality statistics in Dublin and in the other principal urban sanitary districts in Ireland. The death-rate in Dublin during last year was equal to 25·2 per 1000 of the estimated population, and was lower than in any of the ten preceding years 1878–87, during which the annual rate averaged 29·9, and ranged from 35·9 in 1880 to 26·9 in 1886. Notwithstanding this decline, the death-rate in Dublin last year compares unfavourably with the rates in other large towns of the United Kingdom; for instance, the rate was 18·5 in London, 18·0 in Edinburgh, 22·0 in Glasgow, 16·9 in Bristol, 17·8 in Birmingham, 20·3 in Liverpool, and 16·4 in Hull. Let us, however, compare in greater detail last year's mortality statistics for Dublin with those for London, with a view to throw some light upon the excessive death-rate recorded in the former city. The Dublin summary gives the rate of mortality in that city at six groups of ages. For instance, the death-rate last year among children under five years of age was 74·6 per 1000 living at those ages; in London the death-rate at these ages was 58·2 per 1000. Between five and twenty years of age the Dublin rate was 7·8 per 1000, against 3·8 in London; and from twenty to forty the rate was 11·5 in Dublin and only 6·7 in London. The Dublin rate at each of the three later age-periods—forty to sixty, sixty to eighty, and eighty and upwards—largely exceeded the respective rates in London; but the excess in Dublin shows a proportional decline after the age of forty years, when the death-rate inevitably increases rapidly. Under the age of five years the Dublin death-rate exceeds that in London by 25 per cent.; between the ages of five and twenty years the Dublin population died last year at more than double the rate that prevailed in London; and between twenty and forty the excess of mortality in Dublin was equal to more than 70 per cent. upon the London mortality. These contrasts are startling; let us, therefore, see what are the causes of death that contributed most largely to this excess of mortality in Dublin. The rate from the seven principal zymotic diseases was equal to 2·85 per 1000 in Dublin, very slightly exceeding the rate in London, which was 2·53. The rate from phthisis was 3·22, and from diseases of the respiratory system 5·01 per 1000 in Dublin; whereas the respective rates in London did not exceed 1·74 and 3·96 per 1000. Thus the death-rate from phthisis was very nearly twice as high in Dublin as in London, and the mortality from phthisis and other diseases of the respiratory organs accounted for 2·45 per 1000 of the excess in the Dublin death-rate compared with that in London, the total excess from all causes being 6·70. The rate from diseases of the brain and nervous system was 3·51 in Dublin, against 2·18 in London; and the rates from diseases of the circulatory system were 1·76 and 1·46 respectively. Without going into further detail, it may be stated that excess in the Dublin rate was general in all classes of disease except the zymotic class, but that it was most striking in the mortality from phthisis. With reference to the marked excess in the mortality of children, it may be pointed out that the deaths of infants under one year of age were equal to 167 per 1000 of the registered births, showing a decline from the still higher rate in the previous year, which was 200 per 1000; in London, however, this rate of infant mortality did not exceed 146 per 1000 last year, being 21 below the Dublin proportion.

THE SERVICES.

Surgeon H. R. Whitehead, Medical Staff, is the first medical officer to join the Brigade of Guards under the new system. He will be attached to the Coldstream Guards in place of Surgeon C. A. Alexander, promoted Surgeon-Major, to fill the temporary vacancy caused by the appointment of Surgeon-Major Fenn to Lord Lansdowne's Staff.

The Official Army Orders for March just issued contain the following notifications regarding the appointment and promotion of Medical Officers belonging to Volunteer Corps:—In the first line of paragraph 52*b*, added to the Regulations for the Volunteer Force, 1887, by Army Order 77 of 1889, after the word "Surgeons," the words "and Honorary Assistant Surgeons" will be inserted.—The following addition will be made to the Regulations for the Volunteer Force, 1887:—1. In the eleventh line of paragraph 409, after the words "For Volunteer Medical Staff Corps," the words "and for Volunteer Medical Officers" will be added. 2. In the first line of paragraph 417, after the word "Corps," the words "and Volunteer Medical Officers" will be inserted. 3. In the fourth line of paragraph 590, after the word "months," the words "and Volunteer Medical Officers for a period not exceeding one month" will be added.

ARMY MEDICAL STAFF. — Deputy Surgeon-General Edmund Humphrey Roberts, half pay, to be granted retired pay (dated March 14th, 1889); Surgeon-Major Chas. Fleetwood Churchill, M.B., to be Brigade Surgeon, ranking as Lieutenant-Colonel, vice H. M. Macbeth, retired (dated Feb. 6th, 1889); Surgeon-Major John Walker, M.B., is granted retired pay (dated March 6th, 1889); Surgeon-Major William Taylor, M.D., from the Seconded List, to be Surgeon-Major (dated Jan. 5th, 1889); and Surgeon William Parsons Feltham has retired on temporary half pay on account of ill health (dated Feb. 18th, 1889).

ARMY MEDICAL RESERVE OF OFFICERS. — Surgeon-Major William Hall, F.R.C.S. Edin., resigns his commission (dated March 6th, 1889), and Surgeon Francis Lawrence Stephenson, M.B., the Woolwich Division, Volunteer Medical Staff Corps, to be Surgeon, ranking as Captain (dated March 6th, 1889).

INDIA OFFICE.—The Queen has approved of the following admissions to Her Majesty's Indian Medical Service. To be Surgeons (dated Sept. 29th, 1888):—Bengal: Herbert Edwd. Drake-Brockman, W. Byam Lane, and Philip Jas. Lumsden. Bombay: Samuel Esmond Prall. (*Erratum:* The second Christian name of Surgeon J. K. Close, M.D., is "Kinnear," and not "Kinneard," as shown in the *London Gazette* of March 6th, 1888.)—The Queen has approved of the retirement from the Service of the undermentioned Officers of the Indian Medical Service:—Deputy Surgeon-General James Henry Loch, M.D., of the Bengal Medical Establishment (dated Jan. 1st, 1889), Surgeon-Major Robinson Boustead, M.D., of the Bombay Medical Establishment (dated Feb. 5th, 1889).

ADMIRALTY. — The following appointments have been made: Fleet Surgeon Henry D. Stanistreet to the *Duncan*, additional, for Yarmouth Hospital (dated March 6th, 1889); Surgeon John C. Fergusson, B.A., M.B., to the *Pembroke*,

additional, Surgeon Robert Hardie, M.B., to the *Dreadnought*, Surgeon James C. F. Whicher to the Plymouth Division of Royal Marines, and Surgeon Robt. H. Nicholson to the *Hercules* (all dated March 1st, 1889); and Surgeon George F. Collins to the *Pigeon* (dated March 12th, 1889).

VOLUNTEER CORPS.—1st Lanarkshire: William John Shaw, M.B., to be Acting Surgeon (dated March 2nd, 1889).

VOLUNTEER MEDICAL STAFF CORPS.—The Woolwich Division: Surgeon J. F. H. Bottrell resigns his commission (dated March 2nd, 1889).

Correspondence.

"Audi alteram partem."

COW-POX AND SMALL-POX.

To the Editors of THE LANCET.

SIRS,—In answer to Mr. Taylor, I have nothing more to say than repeat the assertions which I made in vindication of Jenner—that, seeing the cow-pox vesicle on the udder of the cow only, he was justified in believing that the disease was induced by human agency; he probably would not have denied, any more than I should, that the bull might be inoculated. I still say that, having read Ceely's works as well as those by more recent writers, all the arguments in my judgment are against the belief in the existence of a cattle-pox, and in favour of the cow-pox being a local contagious disease. I must also assert again that the resemblance of the pustules of vaccinia and variola is very great and too remarkable to be ignored. The growth of both takes seven or eight days; in both there is the formation of a layer of lymph from the corium, which drags down the cuticle so as to produce the characteristic umbilication, and this layer, being thrown into folds, forms the meshes or loculi known to every vaccinator. So great a resemblance is not seen between any other pustules, and therefore to my mind is one argument in favour of the relationship of the two affections.—I am, Sirs, your obedient servant,

Grosvenor-street, March 2nd, 1889. SAMUEL WILKS.

To the Editors of THE LANCET.

SIRS,—I have read with much interest the correspondence in your columns on cow-pox and small-pox. There is one statement which I think may be misunderstood.

Dr. Wilks says "there is no such disease as cow-pox in cattle, for the males do not suffer from it, and the cows exhibit it only on the udder." Cow-pox is a vesicular disease of the teats and udder, communicable solely by contact and spreading through a herd of milch cows, being conveyed from animal to animal by the hand of the milker. This explains why we always hear of "*cow*-pox," and never of "*cattle*-pox" or "*bull*-pox." Jenner, who was the first to describe this disease, speaks of it as one which "our oldest farmers were not unacquainted with in their earliest days, when it appeared among their farms without any deviation from the phænomena which it now exhibits." I need not tabulate the various outbreaks referred to by Jenner, but it was very prevalent in the western counties in his day; nor need I refer to the accounts of Pearson, Aikin, Ring, and other writers of the same period.

A long interval followed in which outbreaks of cow-pox were not recorded, not because they did not exist, but because they were either concealed by the dairymen or did not call for remark. In 1838 Estlin met with the disease and raised a stock of lymph, but the idea was started that it was not the true Jennerian cow-pox, but a *spurious* cow-pox; the evidence, however, on this point was conclusive, for the lymph was widely used, producing after the early removes correct vaccine vesicles. In 1840–42 Ceely published his classical work, in which he says that cow-pox "had long been known in the Vale of Aylesbury and neighbourhood." He investigated a number of outbreaks, and has fully described the disease on the teats of the cow and the hands of the milker. It may be asked, What evidence is there that the prevalent disease described by Ceely was the same as the cow-pox of Jenner? The answer is as conclusive as before, for Ceely raised several stocks of vaccine lymph from these outbreaks.

Again a long period followed in which there was neglect to record outbreaks of cow-pox, but that it stil existed is certain from the evidence of Dr. Sanderson. Mr. (now Sir John) Simon quotes the words of Dr. Sanderson in his sixth report, 1863: "From statements made to me by lay practitioners in these districts [the whole pastoral country which, from Gloucester to Thornbury, lies between the Severn and the Cotswold Hills, having Berkeley in its centre, Jenner's birthplace] it appears that cow-pox is usually to be met with in the dairy farms in the months of April, May, and June. When a dairy is invaded, the disease not only infects the whole of the stock, but is very frequently communicated to the milkers—invariably men,—on whom the vesicles are seen on those parts of the hand which are applied to the teat in the act of milking, particularly on the grasping surface of the thumb and index finger." Some may be ready to suggest that these were only cases of a disease *like cow-pox, but not really true cow-pox;* but the answer is again absolutely conclusive, for, continuing the quotation, we read: "The inoculating of lymph directly from the cow has been practised in several districts with success; all who have employed such lymph agree in stating that after the first or second transmission the results obtained do not differ from those of ordinary vaccination, either in respect of the progress or character of the vesicle."

From this time onward there is no record of this much neglected disease of the cow until the outbreak in Wiltshire in 1887, which I have described elsewhere. On the Continent there have been numerous records. I will mention some. It was found in sixty-nine places in Würtemberg in 1827–37 in such a state that successful vaccination was performed. There were thirty-nine cases in Würtemberg in 1873 and twenty-eight in 1874, and in the same year in Denmark no less than 374. In Prussia cow-pox occurred in thirty-seven districts in a period of six years. In France also the disease has been fully recognised, and comparatively recently I have described in detail an outbreak at Eysines in 1881, the source of the lymph supplied to the Local Government Board; a second outbreak at Eysines in 1883, and an outbreak at Cérons in the same year.[1]

But not in a single instance has any connexion been proved with small-pox; and this leads me to Dr. Wilks' statement that "Jenner was quite justified in presuming that the cows had been infected by human agency." I should be very much indebted to Dr. Wilks if he would refer to any statement in Jenner's writings which have led him to attribute this theory to Jenner. Jenner satisfied himself that cow-pox arose from "grease" in the horse; he also believed that small-pox had its origin in the "grease." As cow-pox protected against small-pox, and as there was reason to suppose, as he thought, that the two diseases had a common origin, he invented the term *variolæ vaccinæ*, as a Latin handle to the dairyman's *cow-pox*. His nephew, Henry Jenner, believed that the cow-pox was the "small-pox in its original unadulterated state before it became contaminated by passing through the impure and scrofulous habits of human constitutions." This is obviously the reverse of the doctrine of the present day. This is not cow-pox derived from man, but small-pox derived from the cow.

All this theorising arose from the fact of the protective influence of cow-pox against small-pox, and was speedily followed by the ingenious suggestion that cow-pox on the teats of the cows was produced by milkers suffering from small-pox. This came from America; it was brought forward by Dr. Waterhouse, of Massachusetts, in a letter to Jenner. Cow-pox was never called cow small-pox by dairy folk, but a strong attempt was made to justify the term in the Report of the Committee on Vaccination in 1839. I must admit, with Dr. Creighton, that the natural cow-pox and the early removes in man have at certain stages a similarity to the hard sore, and the appearances in Ceely's and my own drawings are suggestive of a possible origin of the term Cow-pox or Pap-pox. That this similarity in appearance does strike those who have the care of animals is supported by the fact that an outbreak of horse-pox, the history of which I hope shortly to publish, was mistaken for a disease known as *maladie du coit* or *maladie vénérienne du cheval*. But an idea which is being circulated, that cow-pox and syphilis are one and the same disease, is a monstrous piece of misrepresentation.

The pathology of cow-pox and horse-pox involves matters of the highest importance and of the deepest interest to comparative pathologists. There ought to be no doubt about

[1] Brit. Med. Jour., July 14th, 1888.

the nature of cow-pox. If the current view of the origin of cow-pox from the hands of the variolous milkers be the true explanation, how is it that it has never been confirmed by observation? If it be inaccurate, by all means let us "nail it to the counter," or sweep it into the "pathological dustbin."

I am, Sirs, your obedient servant,

Manchester-square, Feb. 23rd, 1889. EDGAR CROOKSHANK.

THE TREATMENT OF FRACTURES OF THE ELBOW-JOINT.

To the Editors of THE LANCET.

SIRS,—At the meeting of the Clinical Society on the first evening of this session, I took the opportunity of suggesting that fractures through the elbow-joint should be treated by placing the forearm in an extended position; and I made this suggestion in consequence of having seen several instances in which the ordinary treatment by the rectangular splint had not been followed by results entirely satisfactory. As is shown by your report of the meeting in THE LANCET of Oct. 20th, 1888, in this suggestion Mr. Bryant and Mr. Heath did not concur, and Mr. Heath again, in his clinical lecture on Fractures of the Upper Extremity, published in THE LANCET of Jan. 19th, 1889, recommends that, "in all cases of fracture of the lower end of the humerus the arm should be well bent." A short time after the meeting of the Clinical Society, Sir James Paget most kindly pointed out to me a communication on this subject to the German Surgical Society, published in the Transactions of that Society,[1] by Dr. Carl Lauenstein of Hamburg. Treatment of these fractures by placing the elbow in the extended position is strongly advocated by Dr. Lauenstein. The following is a *précis* of his paper. Reference is made to the fact that in most manuals of surgery it is recommended that fractures of the lower end of the humerus should be put up with the elbow flexed. This position is also in the teaching of Professor Baum approved, whether the fracture be transverse immediately above the trochlea, T-shaped, or oblique through the condyles. Dr. Lauenstein alleges, on the other hand, that serious and irreparable damage to the joint may accrue from this treatment, and asserts that mischief may be avoided by placing the forearm in the extended position at the commencement of treatment. A description is given of the dissection of an elbow twelve months after it had been fractured and put up in the rectangular position, the patient, who had been under the care of Dr. Dencker, having died of tabes. The elbow-joint, which was supposed to have been flexed when the splints were applied, was really extended, the flexion having been actually through the line of transverse fracture, just above the trochlea. The fracture had united, so that the trochlear fragment was fixed at *right angles to the shaft of the humerus*, and, therefore, the patient had lost the power of extension movement, the joint being already fully extended, although seemingly flexed. This dissection led to the conclusion that the extended position at the commencement of treatment should replace the old position of flexion. Since he had adopted this position for these fractures Dr. Lauenstein had obtained improved results, a more free ultimate use of the extremity had been secured and the deformity either of cubitus valgus or cubitus varus had been obviated. Great weight is attached to the circumstance that even considerable displacement of the lower end of the humerus (processus cubitalis) cannot be adequately recognised in the rectangular position of the joint, more especially when effusion of blood and swelling of the soft parts exist. This is corroborated by the fact that where an oblique fracture through the inner condyle has united with an upward displacement of the condyle no effect on the shape of the arm by this displacement is seen until the forearm is extended, when a considerable degree of cubitus varus becomes at once evident. A parallel is drawn in respect of this point between cubitus varus and genu valgum; the flexed position of the knee can conceal a high degree of genu valgum, which extension betrays. One advantage of the extended position is that it enables the surgeon, by his eye, to detect any deviation from the normal axis of the limb as easily as in fracture of the shaft of a long bone, and the bones of the forearm in the extended position furnish a lever by which the fragments of the lower end of the humerus may be manipulated and adjusted. Moreover, in the extended position the anterior portion of the capsule of the joint is held "on the stretch," and the bones of the forearm are, as far as possible, prevented from becoming entangled in the proliferating and overlapping callus. Three illustrative cases are given in which, although fairly good mobility of the elbow and usefulness of the limb existed, there was a greater or less degree of cubitus varus. The patients, adults, were a sailor, a lady, and a student, and had suffered from fracture of the elbow at the ages of five, eleven, and seven years respectively, and had been treated in the rectangular position. Dr. Lauenstein insists that surgeons ought not to rest satisfied with conserving the mobility of the joint simply, since the deformity of cubitus valgus or varus may be of ulterior prejudice to the patient. Dr. Illingworth of Accrington read a paper on Fractures into and in the vicinity of the Elbow-joint in the Section of Surgery at the Dublin meeting of the British Medical Association in 1887, and illustrated the deformity caused by rectangular splints by casts, and he has devised a splint[2] for the putting up of these fractures in the extended position. I regret that I was not earlier aware of the existence of this paper, but by some means or other it escaped publication until Feb. 9th of this year.

I remain, Sirs, your obedient servant,

March, 1889. T. W. NUNN.

[1] Verhandlungen der Deutschen Gesellschaft für Chirurgie, April, 1888, and also printed in Von Langenbeck's Archiv, Bd. xxxvii.

ROYAL COLLEGE OF SURGEONS AND ITS MEMBERS.

To the Editors of THE LANCET.

SIRS,—The Council of the Medical Defence Union has decided to support Mr. Lawson Tait in his action against the Council of the Royal College of Surgeons, and the considerations which led to this decision may be of interest to your readers.

The Medical Defence Union is not concerned with the merits of the dispute between the College and its Members; but since Mr. Tait, as a Member and Fellow of the College, has been threatened by the Council with deprivation of his Fellowship and Membership because in the course of the controversy he has followed what he conscientiously thinks to be a right and proper policy, the Council of the Medical Defence Union considers that it is a fit and proper case to be defended. The position is simply incredible that Mr. Tait or any other Member of the College should be threatened with deprivation of the privileges of Membership because he affixed his name to a document calling a meeting of the Members at the College.

We are, Sirs, yours obediently,

LESLIE PHILLIPS, M.D., } Hon. Secs. Med.
March 5th, 1889. A. J. BATEMAN, M.B., } Defence Union.

To the Editors of THE LANCET.

SIRS,—Doubtless by this time most of the Members of the Royal College of Surgeons are acquainted with the recent action of this Association at the meeting which was convened and held at the College, but adjourned to the Venetian Chamber of the Holborn Restaurant, on Thursday, the 28th ult. This meeting, after an ineffectual application from us to the Council for permission to hold the same in the hall of the College, was summoned, on the requisition of thirty Fellows and Members, for the purpose of presenting to the whole corporation the draft of a Bill which is about to be presented to Parliament for amending the constitution of the College, and for establishing the rights of the Members which have for so many years been denied them. Those who convened this meeting of the Fellows and Members have been threatened with the penalties contained in Bye-law 17, which enables the Council to degrade and ruin any who may have taken part in summoning a meeting of one's fellow members for the purpose of discussing matters seriously affecting their interests. The Association of the Members has now taken definite action in the matter, and injunctions have been served upon the various members of the Council restraining them from closing their doors against the Fellows and Members, and prohibiting them from enforcing the penalties of Bye-law 17, which, it is alleged, on behalf of the Members, is invalid, and also from their using the College funds in

[2] Made by Aitken and Co. of York

defending this action. To sustain the legal action which the Members have now taken, counsel has been instructed and large expenses incurred. We look to the general body of the Members to support the Association and those who have shown their willingness to risk so much on behalf of their professional brethren, and we ask for both moral and pecuniary assistance, as the necessary expenses incurred by the legal and Parliamentary proceedings which have been taken can only be met by very substantial donations, which should be sent to the Hon. Treasurer, Deputy Surgeon-General C. M. Jessop, 98, Sutherland-avenue, W.

We are, Sirs, your obedient servants,

WARWICK C. STEELE, } Hon. Secs. Assoc. Memb.
March 6th, 1889. WM. ASHTON ELLIS, } Roy. Coll. Surg.

*** We presume our correspondents to mean that notices of application for injunctions have been served.—ED. L.

SEWAGE DISPOSAL.

To the Editors of THE LANCET.

SIRS,—As I have only just had an opportunity of reading Dr. Corfield's address "On the History of Sewage-disposal Inquiries," to which your leader has given additional importance, you will, I trust, allow me, though somewhat late, to make a few remarks on that address in THE LANCET.

I pass at once to Dr. Corfield's remarks *re* the late Royal Commission on Metropolitan Sewage Discharge. Regarding the previous portions, I can only express a hope that they are more accurate as to their facts than these are. In the concluding paragraph of his address, Dr. Corfield states that the scheme proposed to be carried out by the Metropolitan Board of Works, "while being enormously costly, will not only not settle the question, but will, rather, increase the difficulties of settling it effectually." I feel tempted to ask, does Dr. Corfield know the scheme proposed, and has he even read his own address? On pages 31 and 32 &c. of the separate copy of the address, Dr. Corfield gives some of the recommendations made by the Royal Commission, which are as follows. Recommendation 3: Some process of deposition or precipitation should be adopted. Recommendation 4: Such process could be conveniently applied at the two present outfalls. Recommendation 10: The clarified sewage would require further purification. Recommendation 11: To effect this it should be applied to land in the neighbourhood of the outfalls; or (Recommendation 13), if suitable land in sufficient quantity cannot be secured at the present outfalls, the clarified sewage should be carried down as low as Hole Haven, or, as an alternative, the raw sewage should be carried to Hole Haven, there clarified, and then discharged into the river.

Now what is the scheme in process of being carried out by the Metropolitan Board of Works? The sewage is to be clarified by precipitation at the present outfalls, and the effluent is to be further purified by the addition of permanganate before its discharge into the river. What, then, is the difference between this scheme and the first one proposed by the Royal Commission? Simply the substitution of purification of the effluent by permanganate—a process not thought of at the time of the Royal Commission—in place of filtration through land. In connexion with this, it may be well to remind your readers that the only chemist by profession on the Royal Commission is one of the four chemists recommending the adoption of the Metropolitan Board of Works scheme.

Now, assuming even that the scheme proposed will ultimately be found insufficient—which I have no hesitation in saying will not be the case during this century, if only the new County Council have the wisdom to leave the management of it in the able hands of their chemist, Mr. Dibdin,—and supposing it fails, what then? Not a single penny will have been wasted, and two of the alternative schemes proposed by the Royal Commission can be carried out with all the present plant—viz., that given under Recommendation 11 and the first one under Recommendation 13. Where, then, have the Metropolitan Board of Works run counter to the recommendation of the Royal Commission?

The next point I should like to discuss is the alleged enormous cost of this scheme, branded as abortive. Does Dr. Corfield know what the cost will be? If not, let me inform him and your readers that the scheme involves a capital outlay of about £1,140,000, and an annual outlay for materials, barging, sludge, working expenses, &c., of £115,000. To carry the sewage to Hole Haven will cost about £3,400,000, with an annual outlay for pumping of about £40,000. As the sewage will in any case have to be submitted to a precipitation process, the interest on £3,400,000 and the £40,000 a year will be charges in addition to the above. It is really time that loose statements regarding the enormous cost of the Board's scheme should cease. The scheme may, in course of time, have to be supplemented; but there cannot be a shadow of a doubt that it is by far the cheapest scheme as yet proposed, and that it will, if properly carried out, be effective for a good many years to come.

I am, Sirs, yours &c.,

Laboratory, Westmin. Hosp. Med. School, Feb. 23rd, 1889. A. DUPRÉ.

PARALYTIC DEFORMITY OF THE FOOT.

To the Editors of THE LANCET.

SIRS,—Mr. Edward Freer, in your issue of this date, states that in my paper on the above subject no mention is made of a condition of slight calcaneus which coexists with talipes arcuatus. I admit the fact with all readiness, for these two conditions of paralytic deformity cannot by any possibility be developed in the same foot; in calcaneus the contractile power of the extensors is less than that of the flexor muscles of the foot, while arcuatus results from the flexors being weaker than the extensors. The condition to which Mr. Freer refers is ordinary paralytic calcaneus in the early stage, and if he will turn to your issue of Feb. 2nd he will find that I have there described the distortion of the foot, with shortening of the plantar fascia, which is one of the characteristics of that deformity. Talipes arcuatus is the term I have applied to distinguish a condition of increased arching of the foot, unaccompanied by any other complication. The existence of this deformity, and its classification, were first given in an article on "Orthopædic Surgery," written by me some five or six years ago, and published in the *International Encyclopædia of Surgery*,[1] vol. vi.

I am, Sirs, yours faithfully,

Harley-street, W., March 2nd, 1889. F. R. FISHER.

CONSTIPATION.

To the Editors of THE LANCET.

SIRS,—In your issue of Feb. 9th, Mr. Jeaffreson recommends a certain form of exercise for constipation depending on weakness of the abdominal muscles, and considers the bulk of cases due to this cause. Without criticism, may I ask will this alone suffice without medicinal treatment? Where abdominal weakness is present there is mostly a *general want* of tone coexisting, and although the abdominal muscles play an important part in the act of defecation, constipation is as often referable to torpidity of the muscular coat of the intestine; hence, will this exercise overcome the difficulty without such important drugs as nervo-muscular stimulants? Habitual purgation and the use of enemata are undoubtedly pernicious, but in the treatment of constipation, whatever be the cause, unless the natural means of acting on the bowels—viz., proper diet—be attended to, permanent service can scarcely be ensured. Where the abdominal muscles are so deficient as to call for treatment, it would probably be in corpulent persons with pendulous abdomens; hence the difficulty of the prescribed treatment. Would not the wearing of a firm, broad, flannel bandage be equally beneficial?—I am, Sirs, yours truly,

Feb. 13th, 1889. R. P.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Election of Mr. Rushton Parker.

A SPECIAL MEETING of the trustees of the Royal Infirmary was held on the 1st inst., to elect an honorary surgeon in the place of Mr. E. R. Bickersteth, the senior surgeon, whose retirement was noticed in THE LANCET a few weeks back. Mr. Rushton Parker, F.R.C.S.Eng., Professor of Surgery in the Liverpool University College, and for the last eleven years honorary assistant surgeon to the in-

[1] Macmillan & Co., 1886.

firmary, was elected without opposition, there being no other candidate. Mr. Parker is well known as the author of numerous papers on the treatment of hernia and on abdominal surgery generally. He has already acquired considerable experience of surgical work in the institution to which he is now surgeon, and previously at the Stanley Hospital. Though old enough to be an experienced surgeon, he is still young enough to have many years of useful work before him.

Port Sanitary Work in Liverpool.

Dr. Stopford Taylor, the medical officer of health and port sanitary officer of Liverpool, reporting on the latter part of his work, observes that the year 1888 was a very busy one, though there was nothing special beyond the ordinary conditions with which the officers of the authority have usually to deal. The large emigration business required great attention on the part of the inspectors to the emigrant lodging-houses, the keepers of which discharged their duty fairly well under the circumstances. The sickness found was of a slight character, but being contagious the patients were removed to the hospital; of thirty-seven patients removed, twenty-seven were suffering from measles. During the year 22,290 vessels entered the port, of which 21,089 were British. Of these ships, 4126 were inspected during the year, 3876 being found in a good or fair condition, and 250 defective. In 96 the forecastles, peaks, deckhouses, or cabins required cleansing, painting, or lime-washing. The number of emigrants leaving the port of last year was the largest for many years past, and 240,566 persons passed through the city without causing any infectious disease.

The Burial Difficulty at Bootle.

At the last meeting of the Bootle Health Committee, the town clerk informed the committee that, according to the law, it was the duty of the borough hospital authorities to bury the bodies of any patients who died there whose burial was not otherwise provided for. They might, under a magistrate's order, send a body to the mortuary, in which case the guardians would be responsible for the burial, but the latter could afterwards come upon the committee for the cost. The Bootle guardians have decided to give an annual subscription to the borough hospital based upon the average annual number and the cost of the burial of unclaimed bodies, but they will not pay for the interment as such.

Liverpool, March 6th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Durham University.

THE *Durham University Journal* says: "We see from a provincial paper that the academic honour LL.D. is about to be presented to Professor Brady, M.D., F.R.S., &c., of this college, by the University of St. Andrews, for which we feel very gratified.'" I am glad to hear that Professor Heath's slight indisposition has passed off, and that he is again able to meet his pupils in his class-room, where he will receive a hearty welcome.

Mining Accidents in North Yorkshire and Cleveland.

It appears from returns issued by the North Yorkshire and Cleveland Miners' Association that the number of minor accidents which took place in 1888 in the district above mentioned was 846, while the number of fatal accidents in the same period was 13. It is pleasing to know that the number of serious casualties is showing a steady diminution. The occupation will, of course, always involve a certain amount of risk and peril.

Newcastle and the Sweating System.

Newcastle has been visited by Mr. R. E. Sprague Oram, travelling secretary to Lord Dunraven's Committee on the Sweating System. In company with Mr. James Henderson, Inspector of Factories for Scotland and the North of England, Mr. Oram visited a number of workshops in the city as well as private dwellings in which work is carried on. It is understood that they conversed freely with both workmen and employers during the inspection, and our local papers say that they expressed an opinion that sweating, if practised in Newcastle, had not reached to any great extent. Newcastle, of course, is not noted for clothing manufacture, the greater quantity of ready-made clothing coming from the great manufacturing towns of Yorkshire and Lancashire.

Prevalence of Cancer in Whitby.

Mr. Johnson Herbert, the medical officer of health for the borough of Whitby, has just presented a very elaborate and painstaking report on the health of the town. Mr. Herbert's report presents too many points of interest to allude to here, but one is very striking, and that is as to the prevalence of cancer, of which he says there have been eleven cases during the year, which he thinks is a large proportion. A small town like Whitby would probably afford a good field for investigation as to the causation of this disease, for except in the summer season, which is a short one in Whitby as regards visitors, the population fluctuates very little, and the intermarriage of the Whitby people is, I believe, more common than in larger towns. It would be well to find out if this intermarriage and heredity as observed in Whitby, had any connexion with the causation of cancer. Mr. Herbert's report has more than a passing interest, for it is possible that in some small field like Whitby, where observation can be concentrated and focussed, some of the problems of cancer and kindred diseases may be solved.

Newcastle-on-Tyne, March 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

EDINBURGH.

Royal Medical Society Dinner.

THIS year the Presidents and Council of the Royal Medical Society tried an experiment which has proved so successful that it is sure to be repeated. They held the annual dinner in the Society's Hall, Melbourne-place, the hall so well known to all old members of the Royal Medical Society. About sixty members were present, most of the older guests being past presidents of the Society. Dr. Harvey Littlejohn, senior President of the Society, occupied the chair, and was supported by Drs. Carter, Gillespie, and Abernethy, the other presidents, who acted as *croupiers*. The speeches throughout were exceedingly good, but Sir James Crichton Browne certainly carried off the palm for finished oratory. In speaking of the Royal Medical Society, he said that in bestowing laudation upon that Society he might be accused of hyperbole, but they could, he thought, hardly realise all that it was to the medical student of twenty-five years ago. Times had changed. The medical education in Edinburgh had enormously developed and improved. The men of the present day, with their spacious class-rooms, their well-appointed laboratories, their tutorial systems, their facilities for practical study, their Students' Union, their refreshment-rooms, and their athletic clubs, could scarcely realise how bare and bald their lot was, comparatively, at the time he spoke of. They were lectured to and left alone. The solitary inducement to work was the "pass," and the one deterrent from failure was the "pluck." He did not allege that there were not advantages connected with the practice of those days. He was not going to say that the University even in those days did not perform a great and noble work, for it supplied the country with able and stimulating teachers, and men of European fame—Goodsir and Christison, Bennett and Laycock, Syme and Simpson, Balfour and Playfair; but this he must maintain, that outside the University they had to come to that Society for formative influences, without which their medical education was incomplete. In those days the *alma mater* was not so tender to them as to her children of the present day, and when the mother was stern the kind nurse drew to herself a peculiar affection; and therefore it was that the Royal Medical Society was peculiarly endeared to the men who gathered under its wing in the times of which he had spoken. Dr. Joseph Bell, the President of the Royal College of Surgeons, Edinburgh, remarked that it had often been pointed out as a peculiar arrangement that there should be four presidents of the Royal Medical Society, but he wished to remind his hearers that there was only one Royal Medical Society, and that there were many Colleges of Physicians and Surgeons, all of which had to be supplied with presidents. The inference was obvious. It came out during the evening that Sir Douglas Maclagan, one of the guests, first became a member of the Society just sixty years ago.

The Royal Society of Edinburgh.

At the last meeting of the Royal Society of Edinburgh it was intimated by the President, Sir William Thomson, that a Keith prize had been awarded to Mr. J. T. Buchanan, a M'Dougall-Brisbane prize to Dr. John Murray, and another to Dr. Archibald Geikie. A paper by Dr. J. Oliver, entitled "Deductive Evidence of a Uterine Nerve Centre and of the Location of such in the Medulla Oblongata," was read, but no discussion followed. A joint communication was made by Dr. Noël Paton and Dr. Ralph Stockman on "The Metabolism of Man during Starvation," in which were embodied the results of observations made on Alex. Jacques, the Frenchman, who fasted for thirty days in Edinburgh last October and November. They found that during his fast he lost one-fifth of his weight. Dividing that time of his fast into periods of five days each, it was observed that, whereas in the third, fourth, and fifth of these periods the proportion of flesh loss to non-nitrogenous loss was wonderfully alike, in the second and sixth periods there was as remarkable a difference. They found that the loss of nitrogen and carbon in their relation to each other was very much the same during starvation as when ordinary diet was taken. In conclusion, it was shown that Jacques fasted under conditions very much more favourable than those under which Tanner and Cetti fasted, for he lived in a very warm atmosphere, being very sensitive to cold, and took comparatively little exercise, and by both these means he had greatly diminished the loss of tissue.

Edinburgh Public Dispensaries.

It is calculated that about 40,000 patients were, during last year, treated by the medical officers and students connected with the Edinburgh public dispensaries. It is claimed by the youngest of these dispensaries, the Provident, that by charging a penny for each potion, box of pills, or ointment, the stigma of pauper relief is removed, and thereby a spirit of independence is encouraged. Most people will be inclined to doubt the accuracy of such a contention. The destitute and really poor should undoubtedly get their medicine for nothing, but those who can afford to pay for medicine and advice should not be allowed to delude themselves or others into the belief that by paying a penny for what is usually valued at thirty or sixty times that amount they are maintaining their independence. It would be well to get rid of such a notion.

Edinburgh, March 5th.

ABERDEEN.

University of Aberdeen.

At a meeting held on Saturday, the 2nd inst., the Senatus of the University of Aberdeen resolved to confer the honorary degree of LL.D. upon, among others, Thomas Lauder Brunton, M.D., F.R.S., London; and William Mackie, M.D., C.M.G., Alexandria.

The Proper Interpretation of the Compulsory Vaccination Act.

Some months ago two gentlemen were prosecuted in the Sheriff's Court here for refusing to have their children vaccinated, and as they had already been prosecuted and convicted on Dec. 28th, 1887, of an offence under the same section of the statute and in respect of the same children, it was contended that this second complaint by the inspector of poor was incompetent. Sheriff Wilson sustained this objection, and dismissed the complaint. He held that the Compulsory Vaccination Act did not provide the remedy of a prosecution for every six months during which the child should be unvaccinated. This decision was appealed against in the Justiciary Appeal Court at Edinburgh yesterday, and the judges on the bench were unanimous in their opinion that Sheriff Wilson's interpretation of the Act was wrong. They sustained the appeal, and remitted the cases to the Sheriff. In giving judgment, the Lord Justice Clerk said: "The plain reading of the Act is this—that a list has to be made up every six months of all persons who do not appear on the register as being vaccinated, that they are to be dealt with, and if the parent or guardian refuse to comply with the order to vaccinate, then they must suffer the consequences." Lord Adam said: "I think it is altogether a misapprehension and misreading of the Act to say that this man, because he refused an order pronounced six months before, is being convicted of the same offence, because he refused to obey an order pronounced six months afterwards. The two things are totally distinct. Therefore, I think the Sheriff-substitute was quite wrong in sustaining the objection barring further procedure under the complaint."

The winter session closes at Marischal College on Friday, the 15th inst., and the professional examinations begin on Monday, the 18th instant. The summer session begins on Monday, April 22nd.

Aberdeen, March 5th.

DUBLIN.

(FROM OUR OWN CORRESPONDENT.)

The Conjoint Scheme of the Colleges of Physicians and Surgeons.

CONSIDERABLE changes are being made by the Committee of Management of the combined Colleges in the curricula for the diploma of these bodies. These alterations must necessarily be ratified by the executive of both the Colleges, but I am in a position to state that they will not apply to any of the present medical students, but merely to those who may enter the study of their profession after the various changes have been sanctioned by the Colleges of Physicians and Surgeons.

Royal Academy of Medicine in Ireland.

At a meeting of the Medical Section held last Friday, Mr. J. Kellock Barton read a very interesting paper on "Teneriffe as a Health Resort." He described the various parts of the island, Laguna being the most favourable, the lowest temperature for a series of years of this latter place being 58°. His opinion was that Teneriffe was unsuitable for certain lung affections, particularly phthisis complicated with hæmorrhage, asthma, and the early stages of phthisis. On the other hand, he recommended it for patients suffering from chronic bronchitis and emphysema. He concurred in the opinion expressed by others, that the climate was drier than that of Madeira.

Cork District Lunatic Asylum.

During the past year there was a very high recovery-rate—namely, 42·4 per cent. on those admitted to the asylum. The death-rate was exceedingly low—indeed, the lowest for the last twenty years,—and must be regarded with satisfaction, more especially as the asylum for a considerable time has been much overcrowded.

Dublin and Suburban Workmen's Dwellings Company.

There is no doubt that the death-rate of Dublin is influenced by the tenement houses, some 7000 in number, the condition of a large proportion being very bad indeed. It has been pointed out that 32,000 families out of the 54,000 families inhabiting this city reside in these tenement houses, and it is scarcely credible that these 32,000 families have on the average but one room and a half per family. The Dublin and Suburban Workmen's Dwellings Company has been formed for the purpose of providing, at reasonable rents, an improved class of dwellings for the workmen of the city and county of Dublin. There will be five kinds of houses, designed and constructed on the most modern principles. Those designated first class will be let at a weekly rent of 6*s.* 6*d.*, the second class at 5*s.*, third class at 3*s.* 6*d.*, fourth class at 2*s.* 6*d.*, and the fifth class at 2*s.* The chairman of the Board of Directors is Sir Charles Cameron, the medical officer of health for Dublin.

Illness of Dr. Johnston of Dublin.

I regret to state that Dr. George Johnston, ex-Master of the Rotunda Lying-in Hospital, is at present very seriously ill at his residence in Stephen's-green. I understand he is suffering from senile gangrene of the foot.

Health of Ireland: December Quarter.

During the December quarter of last year, the births registered in Ireland numbered 25,727, or a rate of 21·5 per 1000; and the deaths, 18,735, or 15·7. The birth-rate is under the average for the corresponding quarter of the past ten years, while the deaths are 1·3 below the average for the same period. Compared with the returns of pauperism furnished by the Local Government Board for the last quarter of 1887, there is a decrease of 1875, or 4·0 per cent., in the average number of workhouse inmates on Saturdays during the quarter, and a decrease of 1743, or 2·8 per cent., in the average number of persons on out-door relief

Dublin, March 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Measles and Pulmonary Affections.

IT is a notion current in pathology that measles has a great tendency to be complicated with broncho-pneumonia. Dr. Bard, of Lyons, recalling in the *Lyon Médical* a work that he had previously published, does not admit the opinion generally current that measles is of itself a direct cause of broncho-pulmonary accidents. He is more inclined to hold that measles appears simply to create a greater receptivity for broncho-pulmonary inflammations, but is powerless to produce them without the intervention of an additional element, without the aid of a secondary infection. Whatever may be the productive mechanism, Dr. Bard protests against patients in the hospitals suffering from simple measles being placed in the same ward with those affected with pulmonary complications.

Spirillary Abscesses.

Professor Verneuil recently communicated to the Academy of Sciences a work that he had written conjointly with M. Clado, his *chef de clinique* at the Pitié Hospital, on spirillary abscesses. He cited three cases where abscesses in submaxillary adenitis had for origin the spirillum of the saliva. The spirilla penetrated as far as and invaded the glands. Independently of the pathogenic microbes already found in the abscess, M. Verneuil brought in evidence the presence of microbes of the saliva. He affirmed that there was nothing so virulent as the saliva, and stated that a lady who had pricked her hand whilst using a toothpick had an abscess full of salivary spirilla.

Discovery of Prehistoric Remains.

At the same meeting of the Academy, M. de Quatrefages communicated a note from M. E. Rivière on a newly discovered prehistoric station on the banks of the Vezère, opposite that of the Langerie. It is of the quaternary period. M. Rivière has collected, amongst the bones of the reindeer and of birds, cut stones and instruments of bone.

A New Aliment.

Dr. Dujardin-Beaumetz recently exhibited at the Academy of Medicine a new alimentary substance, "fromentine," which is obtained from wheat by the aid of special millstones. Fromentine is the embryo of the wheat reduced to flour. It contains three times more nitrogenous substance than meat, and a strong proportion of sugar. Hence it would appear that it might advantageously replace powdered meat as a concentrated food. It may be employed for making soups, and even for making biscuits, the taste of which would not be disagreeable.

Movable Kidneys.

Professor Guyon read an interesting note on nephrorrhaphy practised by him for movable kidneys. He argued that this operation is more simple and less dangerous than extirpation of the kidneys. He added that when movable kidneys give rise only to tolerable symptoms the surgeon should not intervene; it is sufficient that the patient should wear an appropriate bandage. When the symptoms become grave, suture of the kidney should be resorted to, its extirpation being then an operation of necessity.

Human Rabies.

At the last meeting of the Council of Hygiene, Dr. Dujardin-Beaumetz read his report on the 19 cases of human rabies that occurred in the department of the Seine during the year 1888. After having examined the principal cases and established that sometimes the diagnosis might present difficulties, he stated that in 1887, of 306 persons inhabiting the department of the Seine who were subjected to the Pasteurian treatment, 3 deaths only occurred, which gives a proportion of 0·97 per cent. During this same year, 44 persons, who had not been treated at the Laboratory at the Rue d'Ulm, had furnished 7 deaths—that is to say, 15·90 per cent. In 1888, 385 inhabitants of the department of the Seine followed the antirabic treatment, and 4 succumbed, which gives a mortality of 1·4 per cent. Of 105 persons bitten by rabid dogs, and who had not followed the treatment, 14 died from rabies, or 13·3 per cent. If the figures of the last two years be reproduced for the following years, one might establish in a definitive manner the proportion of from 14 to 16 per cent. adopted by MM. Brouardel and Leblanc as representing the mortality in persons bitten by rabid animals. On the other hand, the average of deaths having occurred after the Pasteurian treatment being about 1 per cent., it may be seen that the advantages which are obtained by means of this treatment are in favour of the latter. Dr. Dujardin-Beaumetz, in concluding his report, established that the number of mad dogs is increasing year by year. He expressed the desire that the Prefect of Police should apply with the greatest rigour the regulations concerning stray dogs. Last year there was a considerable decrease in the number of persons applying to the Pasteur Institute during the months from July to November—that is, after the decree of June 8th, 1888, directing all stray dogs to be impounded.

Death of Dr. Léon Legouest.

At the opening of the meeting af the Academy of Medicine yesterday, Dr. Maurice Périn, the President, announced the death of Dr. Léon Legouest, and immediately suspended the proceedings out of respect to the memory of the deceased member and former president. Dr. Legouest was a retired Inspector-General of Hospitals, formerly President of the Council of Health of the Army, and Commander of the Legion of Honour. He was also Professor of Clinical Surgery at Val de Grâce, and author of a great number of works on Military Medicine and the organisation of military hospitals in the field and garrison.

Paris, March 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Professor Adolf Bardeleben.

DR. BARDELEBEN, Professor of Surgery and eldest member of the Medical Faculty in Berlin University, celebrated his seventieth birthday on the 1st inst. He is a native of Frankfort-on-the-Oder. His father's name was Schwager, and his name of Bardeleben is that of an uncle who adopted him when early bereft of his mother. As one of the founders of the "Tugenbund," or "Union of Virtue," this uncle has a not nuimportant name in history. The names, if not the contents, of some political and historical writings of his are also remembered. It was under this good uncle's guidance that Adolf Schwager Bardeleben, as the now far-famed surgeon then called himself, prepared for the University. He began his academic studies in 1837, and ended them in 1842. Berlin and Heidelberg share the honour of having been his *almæ matres*. Under the influence of Theodor Bischoff, an anatomist and physiologist of Heidelberg, he wrote his first scientific work, "On the Structure of the Ductless Glands," with which he graduated in Berlin in 1841. To this thesis were appended reports of experiments made on animals, and on the consequences of excision of the spleen and thyroid gland in dogs, experiments which have gained a new importance now that surgeons no longer shrink from extirpating these organs in human beings. Bardeleben had to keep the animals on which he experimented in his bedroom. He had to borrow the microscope with which he examined the minuter structure of the glands from Bischoff. It was Bischoff, too, who instructed him in experimenting on animals, which was not very common then. As Bischoff's assistant he became a university teacher at Giessen in 1843. There he acted in the double capacity of physiological assistant and demonstrator in anatomy, and it was his anatomical studies which led him to surgery, in which department he has earned his world-wide fame. His teacher in surgery was Wernher of Giessen. Afterwards, at Greifswald, Bardeleben became widely known as editor of Vidal's "Handbook of Surgery," and, in a narrower circle, as a skilful and cautious operator. He was called to Berlin in 1868 to be Jüngken's successor as head surgeon in the Charité. He took part in the campaigns of 1866 and 1870–71 as consulting surgeon-general. His chief service, however, to practical surgery was his championship of Lister's antiseptic method. Till 1872, when he began to use this method in the Charité, it had few friends in Germany, and it was not till he published his favourable results and showed how Lister's bandages, which were very costly at first, could be made more cheaply and simply, that this ceased to be the case. To Bardeleben belongs a good share of the merit of having reduced the rate of mortality in

German surgical hospitals since the seventies. I may mention, in conclusion, that two of his children are also distinguished, his son Karl Bardeleben, professor in Jena; and his daughter Marie Kremnitz of Bucharest, who has published pictures of life in Roumania, fairy tales, and novels under the pseudonym of "George Allan," and is a fellow-labourer of the poetess Carmen Sylvia, Queen of Roumania.

The Society of the Charité Physicians gave a banquet in honour of Professor Bardeleben's seventieth birthday on Saturday, the 2nd instant. After the Emperor's health had been drunk, Surgeon-General Mehlhausen extolled Professor Bardeleben as a university teacher, a physician, and a sanitary officer; whereupon Bardeleben answered in a humorous speech, comparing the old condition of the Charité with its present one, and proposed the health of the two heads of the hospital. Geheimrath Henoch, the famous specialist for the diseases of children, described the happiness of Professor Bardeleben's home; and was followed by the Geheimräthe Liman, Lewin, Senator, and Bardeleben himself. Then a song was sung in celebration of the hale and hearty septuagenarian. The party sat together till after midnight, drinking beer and listening to the reminiscences of a long and well-spent life which Professor Bardeleben humorously related.

Dr. Bernard Fischer.

Now that Dr. Bernard Fischer has been appointed Professor of Hygiene in the University of Kiel, there are only two Prussian universities—namely, Bonn and Königsberg—without such chairs. Like most of the younger teachers of hygiene (Gaertner in Jena, Gaffky in Giessen, Loeffler in Greifswald, Hüppe in Wiesbaden, Becker in Leipsic, Fraenkel in Berlin, Frank in Naples), Dr. Fischer is a pupil of Professor Robert Koch. He was Koch's assistant in the hygienic laboratory in the Imperial Office of Health, then, along with Dr. Gaffky, his companion on his famous journey to Egypt and India, on which occasion Koch discovered the bacillus of Asiatic cholera. At first Fischer took part only in the investigations in the hygienic laboratory in quest of fundamental rules for disinfection—for instance, the investigation of the phenomena of disinfection by means of bromine. He afterwards published the results of independent research on malaria, and on the phosphorescence of the sea, the fruit of several years' voyages on board German men-of-war. He succeeded in proving that the phosphorescence of the sea is caused by micro-organisms. Of such luminous bacilli he found three varieties; first one in the West Indies in 1886, another in the Baltic in 1888, and then a third also in the Baltic. Cultivations of the Indian one were shown in the Aquarium here two years ago. Fischer has lately succeeded in utilising the light of these bacteria in photography. He has taken photographs of cultivations of phosphorescent bacteria by their own light. He has even photographed the dial of a watch in their effulgence. He has been a private teacher in Kiel University since 1886.

Chair of Anatomy in Zurich.

Dr. Philip Stoehr, of Würzburg, has been called to the chair of Anatomy in Zurich, which has been filled by Germans for about half a century past—by Henle from 1840 till 1844, and by Hermann von Meyer since then. Stoehr is a native of Würzburg, and has been assistant to Köllicker there since 1876, before which he was assistant in the anatomical institutes at Greifswald and Breslau. Like his master, he has devoted his attention chiefly to the history of development and to the finer structure of the mucous membranes and the glands. He is the author of a well-known handbook of anatomy.

Bacteria in Milk.

It is intended to establish a bacteriological laboratory for the investigation of milk. The idea is due mainly to Dr. Hueppe, of Wiesbaden, who has for several years made a special study of the bacteria that appear in milk. He has definitively proved that lactic acid fermentation is caused by a special fungus, and butyric acid fermentation by another. Prazmowski, Liborius, Fuchs, and Neelsen have discovered other bacteria in milk, and their purely scientific researches, undertaken solely with a view to widening the limits of bacteriology, are now bearing valuable practical fruit. It is known that infant mortality is due largely to unwholesome milk, which can now be rendered harmless by sterilisation. Further practical advantages are certain sooner or later to accrue from these investigations.

Professor Westphal, the physician for nervous diseases in the Charité Hospital here, is ill, and is undergoing treatment by Professor Binswanger at Jena.

Berlin, March 2nd.

Obituary.

WM. HENRY WALKER, M.D., L.R.C.P., M.R.C.S.

THE many friends of Dr. William Henry Walker, of Aldbrough (near Darlington), in the North Riding of the county of York, will hear with regret of his death, which occurred rather unexpectedly, at his residence in the above-named village, on Tuesday, Feb. 19th.

Dr. Walker studied at Aberdeen and Edinburgh Universities. He took his M.R.C.S. diploma in 1850, afterwards the L.R.C.P., followed in 1870 by the M.D. St. And. He practised in Aldbrough for nearly forty years, and during that time numbered amongst his patients a great many of the nobility and county families. He was widely known and deservedly esteemed. He was most kind-hearted, sympathetic, and thoroughly unselfish. It afforded him great pleasure and happiness to advance in any way the interests of those amongst whom he lived. He was the founder and principal supporter of the Aldbrough Library and Reading-room, he established and chiefly maintained the village lamps (which Aldbrough was the first village in the neighbourhood to boast of), and he was the chief instrument in obtaining the post and telegraph office in that village. He was a special favourite with the young people, and never wearied in seeking to promote their welfare and happiness. That his thoughtful kindness and genial disposition had endeared him to the hearts of his friends and neighbours was shown on Saturday, when his remains were conveyed to their last resting-place in the quiet churchyard attached to St. John's, Stanwick, amidst demonstrations of heartfelt sorrow. All the blinds were drawn, and as many of the inhabitants as could possibly leave their homes, as well as many gentlemen from a distance, attended to show their respect for the departed. More than thirty wreaths and crosses were sent by his friends.

Dr. Walker's memory will be cherished by all who knew him. He leaves a widow, two daughters, and four sons, three of whom are in the medical profession.

Medical News.

UNIVERSITY OF DUBLIN.—At a meeting of the Senate held on Tuesday, the 5th inst., the following degrees were conferred:—

Bachelor in Medicine, Surgery, and Obstetrics.—Thos. Cuming Askin, Edward Henry Brien, John William Cowl, Francis Gethin Hopkins, Michael Edward Kelly, Philip William McCrea (B.Ch. *stip. cond.*), Charles Ecroyd McNaught, Michael O'Connor, Thos. Arthur Scott, George Bradshaw Stanistreet.

Bachelor in Obstetrics.—William M. Russell.

Bachelor in Surgery.—James Clarke, William M. Russell, Andrew William Orr.

THE DEEP-SEA FISHERMEN MISSION.—The number of cases medically or surgically treated at sea in 1888 by eighteen surgeons and the mission skippers was 7485.

THE Irish Medical Schools and Graduates' Association will hold their annual dinner at the Holborn Restaurant on the 16th inst., at 7.30 P.M.

MEDICAL MAGISTRATE.—Henry Naunton Davies, Esq., L.R.C.P.Lond., has been added to the Commission of the Peace for the County of Glamorgan.

THE SALE OF HORSEFLESH.—Mr. Knowles, M.P. for West Salford, has introduced a Bill into Parliament which contains regulations as to the sale of horseflesh for human food.

INEBRIATE CRIMINAL RESPONSIBILITY.—A lecture on the above subject will be delivered by Dr. Norman Kerr, F.L.S., President of the Society for the Study of Inebriety, in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., on March 12th, 1889, at four o'clock.

FOOTBALL ACCIDENT.—At Peterhead, Aberdeen, on the 23rd ult., Robert Alexander, while playing in a football match, sustained a fracture of the collar-bone by colliding with another player.

IN MEMORIAM.—The Executive Committee of the Cottage Hospital, Walsall, have decided to place a large carbon-print photograph of the late Dr. J. Maclachlan in the board-room, in recognition of the valuable services he, during many years, rendered to the institution.

LITERARY INTELLIGENCE. — Messrs. Longmans and Co. announce the early appearance of the following works:—"The Diseases of Children, Medical and Surgical," by Henry Ashby, M.D., and George A. Wright, B.A., F.R.C.S.; a "Handbook of Cryptogamic Botany," by A. W. Bennett, M.A., B.Sc., F.L.S., Lecturer on Botany at St. Thomas's Hospital, and George R. Milne Murray, F.L.S., Natural History Department, British Museum.

HOSPITAL SATURDAY FUND.—The governing body of this fund held a special meeting on Saturday last, in the board-room, Fleet-street, to receive and consider the proposals for a weekly collection throughout the workshops of London in aid of the medical charities. Representatives from upwards of one hundred firms attended, and resolutions were unanimously carried, confirming the action already taken by the Mansion House Committee.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN.—The Lord Mayor occupied the chair at the annual meeting in aid of this hospital, held at the Hôtel Métropole on the 1st inst. The report, read by the secretary, stated that during the past year the in- and out-patients numbered respectively 450 and 6942, the attendances were 31,989, the dental cases 314, and 417 home visits had been made to children. The ordinary income was about £2000 per annum less than the expenditure required to keep open all the wards.

ROYAL INSTITUTION.—Mr. Eadward Maybridge of Philadelphia, who, by arrangement with the managers, had agreed to give a discourse after Easter on the Science of Animal Locomotion in its relation to Design in Art (illustrated by the zoopraxiscope), a subject of great novelty and interest, has consented to deliver it on Friday evening, the 22nd inst., Dr. Edgar Crookshank being compelled through illness to defer his discourse on Microbes on that evening, as previously arranged. Drs. Douglas Powell and G. E. Whitton have been elected members of the institution.

NORTH-WESTERN BRANCH OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.—Dr. E. Sergeant (Bolton) presided at a meeting of this Branch, recently held at Dalton-street, Manchester. Mr. Vacher read the new regulations for Birkenhead, made under the Dairies, Cowsheds, and Milk-shops Orders in connexion with the Contagious Diseases (Animals) Act, to come into operation on March 1st. A debate ensued, and it was resolved that at the next meeting the subject should be introduced by Dr. Barr (Bury) from a rural point of view.

SURGICAL APPLIANCE SOCIETY. — The annual general meeting of this Society was held at the offices, Finsbury-circus, on the 28th ult. The past year had been one of the most successful in the history of the Society, alike as regards the number of patients and of income. The balance-sheet showed that the assets exceeded the liabilities by £421. In deference to the opinions expressed by Sir J. Goldsmid and Mr. J. Aird, M.P., the committee had decided to abolish the system of requiring all patients to obtain from subscribers a certain number of letters. The Earl of Derby was re-elected on the board of management.

NORTHAMPTON VICTORIA DISPENSARY. — The annual meeting of this institution (the first of the kind established in this country) was held last week. The committee reported that the receipts from free members during the past year amounted to £2706 7*s.* 2*d.*—the largest sum from that source of any of the forty-four previous years of the existence of the dispensary. The fresh admissions in 1888 were 2844. The total number of members, with their families, was now 17,695, or one-fourth of the population of the town. The medical staff had made 67,405 attendances on members during the year; and of these, 40,609 visits were paid to patients at their own homes. The accounts showed there was in the hands of the treasurer, on Jan. 31st last, £1236 5*s.* 2*d.*

BURIAL REFORM.—The Dean of York, chairman of the Council of the Church of England Burial Reform Association, presided on the 2nd inst. at a meeting in York Minster, when it was resolved unanimously that in every case of death from an infectious disease properly prepared earth, or some chemical agency, should be placed in the coffin for the destruction of infectious germs. It was also resolved to convey to Sir Edwin Chadwick, K.C.B., the congratulations of the Association upon the honour which he had received from Her Majesty in recognition of his services in the interests of sanitary burial and sanitation generally.

GENERAL INFIRMARY, LEEDS.—The 121st annual report, just issued, records the constantly widening work and usefulness of the institution; 4693 in-patients were admitted during the year, which, with 250 remaining in the infirmary at the close of 1888, made a total of 4943 treated. The number of out-patients was 24,721, and 586 patients were sent to various convalescent homes. The receipts amounted to £17,430 3*s.* 1*d.*, and the expenditure to £18,757. The money needed for increased and improved accommodation contemplated in the last year's report had been speedily raised, the total being £30,111 10*s.* 3*d.*

ESSEX AND COLCHESTER HOSPITAL.—A satisfactory report for the year 1888 was presented to the governors prior to the annual meeting held on the 14th ult. The income was adequate to discharge the year's expenditure and to reduce the balance due to the treasurer of £95 5*s.* 9*d.* to £22 14*s.* 5*d.* It is gratifying to learn that the experiment of attaching a salaried physician (Dr. Wallace) to the hospital has succeeded in much improving its efficiency, increasing the number of patients, and also of subscribers. There were 554 in-patients and 4726 out-patients during the year, numbers higher than in any year since the foundation of the hospital.

PRESENTATIONS. — Last week a number of the officers in Her Majesty's Customs, Belfast, presented Dr. Richard J. Purdon with a valuable dining-room clock as a token of their esteem and in recognition of his professional services to them and their families.—Dr. J. Brooke Ridley, who has been appointed assistant surgeon to the Metropolitan Asylums Board's institution for imbeciles at Darenth, and who leaves Huntingdon in the course of next week, was on Feb. 27th presented by the nurses and servants at the hospital of that town with a handsome present as a token of the esteem in which they hold him.—Dr. M. S. Anderson has been presented by the Glengarnock ambulance class, in recognition of his lectures to the class, with a valuable marble timepiece.—Dr. John Buchanan of Liverpool has been presented with a valuable umbrella by the members of the ambulance class in connexion with the Edgehill Traffic Department, which has received the benefit of his instruction.

PROFICIENCY EXAMINATION FOR VOLUNTEER MEDICAL OFFICERS.—A course of six lectures will shortly be delivered by Surgeon Walter Pearce, M.D., at the headquarters of the Artists' R.V., Duke's-road, Euston-road, on the following subjects for the proficiency examination:—Constitution of the Army Medical Department; classification and organisation of army hospitals; the medical administration and organisation of army hospitals; the medical administration of an army corps and the detail of hospital establishment in the field; the organisation and *personnel* of bearer companies and field hospitals; the formation and management of dressing stations; the application of the various articles composing the equipment of army hospitals in the field, and the authorised means for the transport of sick and wounded soldiers and the proper mode of employing them; general sanitary regulations and precautions to be taken for ventilation and water-supply in barracks, hospitals, and camps; diet and clothing of the soldier and personal hygiene of troops; medical regulations for the examination of recruits; instructions regarding infectious diseases and cholera epidemics; injuries and diseases to which troops are liable in the field, with regard to the special circumstances of campaigning, and with the duties of medical officers in camp and during marches. Medical officers who enter for this course will be instructed in bearer company and ambulance waggon drill. For further particulars, application should be made to R. R. Sleman, hon. sec. V.A.S.I., 7, St. Benet's-place, Gracechurch-street.

ROYAL ISLE OF WIGHT INFIRMARY.—The Queen, accompanied by the Empress Frederick, Princess Beatrice, and the Princesses Sophie and Margaret of Prussia, recently visited the above Infirmary at Ryde. They were received by Colonel Tattnall and Dr. A. Davy, and conducted over the new wing, just completed; and in the presence of the committee and the medical staff the Queen declared the wing open. The Royal party afterwards went through the different wards, and Her Majesty and the Empress Frederick both expressed themselves highly pleased with their visit and the arrangements of the institution.

KING'S COLLEGE HOSPITAL.—At the annual meeting of the governors of this institution reference was made to the present being the jubilee year of the hospital, the first meeting of governors having been held in 1839. The records showed that the number of in-patients admitted during the past year had been 2124, as against 1811 during 1887; the out-patients had numbered 17,635, as against 17,248. Notwithstanding this increase, the total annual expenditure had only increased from £16,534 to £16,901. On the other hand, the total ordinary income had amounted to £12,718, as against £13,163 of the preceding year. It is hoped that during this the jubilee year of the institution its financial position may be put upon a more satisfactory basis.

BEQUESTS AND DONATIONS TO HOSPITALS.—By the will of the late Mr. John Jowitt of Hare-hills, Leeds, £500 is bequeathed to the Leeds Infirmary.—The late Mr. George Simon of Lower Thames-street and Widmore Lodge, Bromley, has left £50 to the East London Hospital and £25 each to the Dental Hospital, St. Thomas's Hospital, the London Hospital, the City of London Truss Society, the Surgical Aid Society, and the Bromley (Kent) Cottage Hospital.—Mr. John Lowcock, late of Carlton House, Broughton Park, Manchester, has bequeathed £500 to the Salford and Pendleton Royal Hospital and £250 each to the Northern Counties Hospital for Incurables and the Manchester Royal Infirmary and Dispensary.—Mrs. Griffith Llewellyn, sister of General Sir Francis Grenfell, has handed a cheque for £5000 to the treasurer of the Swansea Hospital, the new wing of which was built at the expense of her late husband.—Mercer's Hospital, Dublin, has received £179 15*s.* 6*d.* under the will of Mrs. Henrietta Clouston.—Mr. Bryan Kirby has bequeathed £300 to St. John's Hospital, Limerick.—The late Mrs. Egerton Vernon-Harcourt has bequeathed £2000 to the York Hospital.—The Leathersellers' Company has made an additional donation of 20 guineas to the general fund of the British Home for Incurables (offices, 75, Cheapside).—Mr. Arthur Wilson of Hull has just given a donation of £1000 to the promoters of the proposed Victoria Hospital for Sick Children in that town.—By the will of the late Mr. John Rylands of Manchester legacies in shares of the firm of Messrs. Rylands and Son, Limited, representing in paid-up capital, or money paid in advance of calls, or both, the amounts specified have been left to the undermentioned institutions—namely, Owens College, £10,000; Manchester Royal Infirmary, £5000; Manchester Royal Eye Hospital, £5000; Manchester Lock Hospital, £5000; Wigan Royal Albert Edward Infirmary, £5000; and St. Mary's Hospital, Manchester, £1000.

MEDICAL NOTES IN PARLIAMENT.

The Revolver Question.

IN the House of Lords on the 1st inst., Earl Brownlow, in reply to the Earl of Milltown, stated that the Government had had and still had under their best consideration the question of revolver carrying and selling, but he was unable to say whether legislation could be proposed to Parliament on the subject. He did not think the application of the Acts relating to Poisons would sufficiently restrict the sale and use of revolvers.

On the 7th inst., on the motion of Lord Milltown, it was resolved to present an Address praying Her Majesty to ask her representatives abroad to report as to the laws in force in the various countries with regard to the carrying of firearms by private individuals.

Increase of Defective Vision.

In the House of Commons on the 28th ult., Sir W. Hart Dyke, replying to Dr. Farquharson, said that statements had, he believed, been recently made in the newspapers as to the rapid increase in England of short sight and other forms of defective vision. The Educational Department were quite alive to the importance of the question, and their inspectors would be specially directed to test the accuracy of the alleged facts. The Royal Commission engaged in taking important evidence will shortly report on the subject. Dr. Farquharson gave notice that he would draw attention to the matter at the earliest possible opportunity, and move a resolution.

Dublin Barracks.

Mr. E. Stanhope, replying to Mr. Macneill, promised that the first report of Mr. Rogers Field on the drainage of the Royal Barracks, Dublin, should be laid on the table immediately. The annual death ratio at the Royal Barracks had been 9·18, as against 6·93, the ratio for home service generally.

American Medical Contracts.

Mr. E. Stanhope, replying to Mr. Picton, stated that the British Government had no contract with any American firm whatever for the supply of surgical dressings to the Army Medical Department.

Irish Medical Schools.

On the 1st inst., Mr. Blane asked that a Parliamentary grant should be made to the Catholic University School of Medicine equally with the Queen's Colleges of Belfast, Cork, and Galway, which received among them over £5000 annually. He pointed out in justification of his demand that the Catholic University school had more passes at the last examinations than the other three Colleges.—Mr. A. J. Balfour replied that the reports which he had received suggested that the result of one examination could not be taken as a fair test; and furthermore, that each of the institutions named could establish a fair claim to pre-eminence if allowed to choose its own test.

The Housing of the Poor.

On the 4th inst. Mr. J. Stuart rose to move his amendment to the Address, having reference to the question of overcrowding, but the Speaker ruled the amendment out of order. Considerable discussion ensued, in the course of which Mr. Ritchie announced that it was proposed to ask the House to transfer to the London County Council additional powers under the Nuisances Removal Act, 1866, which dealt with sanitation and overcrowding. It was further proposed to require medical officers of health in London to make reports annually, or oftener if desired, giving full particulars as to the sanitary condition of their districts. The London County Council had the power to appoint a medical officer of health of their own, and, assisted by reports from the local medical officers of health, the Council would be able to keep themselves in touch with all local areas in the metropolis.

On the 5th inst., in answer to Mr. Conybeare, Mr. Matthews said: The report of the Royal Commission on the Housing of the Poor will shortly appear in a cheaper form. No arrangements have been made by me as to the reissue of Mr. Burnett's report. This is a matter for the Board of Trade. I am informed by the Board of Trade that they are aware of the difficulties experienced by Mr. Burnett, but they hope to make some arrangements by which more extended information will be obtained.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.

BARFORD, A. M., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician to the Liverpool Northern Hospital.

COLEMAN, M. C., M.D., M.B. Aberd., M.R.C.S., has been reappointed Honorary Surgeon to the Surbiton Cottage Hospital, Surrey.

DAVIDSON, L. G., M.D., Ch.M. Aberd., has been appointed Government Medical Officer and Vicinator for the District of Bowral, New South Wales, vice Newmarch, resigned.

ELLIOTT, F. J., M.R.C.S., has been appointed Resident Surgeon of the Townsville Hospital, Queensland.

FERGUSON, J. POTTERTON, L.R.C.P., L.R.C.S. Edin. & L.F.P.S. Glas., has been appointed Medical Officer and Public Vaccinator to the Parochial Districts of Knoydart and North Morar, Inverness-shire.

GIBBES, C. C., M.D., M.B., C.M. Aberd., L.R.C.P. Lond., has been reappointed Honorary Surgeon to the Surbiton Cottage Hospital.

GRANGE, F., L.R.C.P., M.R.C.S., has been appointed House Physician to Charing-cross Hospital.

JACKSON, E. S., M.B., C.M. Edin., has been appointed Medical Officer of the Halton District, Lunesdale Union.

JOHNS, H. D., L.R.C.P., M.R.C.S., has been appointed House Surgeon to Charing-cross Hospital.

KILPATRICK, W., M.B., Ch.B. Melb., has been appointed Medical Officer of Health for the Shire of Healsville, Victoria, Australia.

LOANE, JOSEPH, M.R.C.P. Edin., M.R.C.S. & L.M. Eng., Medical Officer of Health to the Whitechapel District Board of Works, has been appointed Public Vaccinator to the Whitechapel Union, vice C. T. Blackman, M.R.C.S., &c., deceased.

MANSON, J. F. W., M.B., Ch.B. Melb., has been appointed Medical Officer of Health for the Shire of Bet Bet, Victoria, Australia.

MARWOOD, A. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Resident Surgeon of the Geelong Infirmary, Victoria, Australia.

MOTHERSOLE, R. D., M.R.C.S., L.R.C.P., has been appointed House Surgeon to Guy's Hospital.

PARKER, RUSHTON, M.B. Lond., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Royal Infirmary and Lock Hospital Liverpool, vice Bickersteth, retired.

PARKIN, A., M.B., B.S. Lond., has been appointed House Physician to Guy's Hospital.

ROOTS, W. H., M.R.C.S., has been reappointed Honorary Surgeon to the Surbiton Cottage Hospital.

SMITH, G. B., M.B., B.S. Lond., has been appointed House Surgeon to Guy's Hospital.

STARLING, E. H., M.B., B.S. Lond., has been appointed House Physician to Guy's Hospital.

WHITESIDE, J. H., M.B., C.M. Edin., has been appointed Medical Officer of the Moreland District, West Ward Union, Westmoreland.

WICKENS, G. F., M.B., Ch.M. Glasg., has been appointed Medical Officer of Health for the Shire of Ballarat, Victoria, Australia.

WRIGHT, A. F., L.F.P.S. Glasg., L.R.C.P. Edin., has been appointed Honorary Surgeon of the Westport Naval Artillery Volunteers, New Zealand.

Vacancies.

In compliance with the desire of numerous subscribers, it has been decided to resume the publication under this head of brief particulars of the various Vacancies which are announced in our advertising columns. For further information regarding each vacancy reference should be made to the advertisement.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident Medical Officer. Salary £200 per annum, with board and residence.

HOSPITAL FOR WOMEN, THE LONDON SCHOOL OF GYNÆCOLOGY, Soho-square, W.—Two In-patient Clinical appointments.

KING'S COLLEGE, London.—Chair of Forensic Medicine.

MIDDLESEX HOSPITAL.—A Fourth Assistant Physician.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Rooms, commons, and washing provided in the hospital, in lieu of salary.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary at the rate of £100 a year, with rooms and attendance, but not board.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Surgeon. Tenable for six months. Board and lodging provided.

Births, Marriages, and Deaths.

BIRTHS.

BRAMWELL.—On the 4th inst., at Drumsheugh Gardens, Edinburgh, the wife of Byrom Bramwell, M.D., F.R.C.P.E., of a son.

CLARKE.—On the 28th ult., at Goudhurst, Stanley-road, Teddington, the wife of Richard Ashmore Clarke, Surgeon, of a son.

MARTIN.—On the 2nd inst., at Cambridge House, Portsmouth, the wife of John H. Martin, M.D., of a daughter.

MARTIN.—On the 4th inst., at The Limes, Walkden, the wife of Wm. Young Martin, M.D., of a son.

MCCLEMENT.—On the 16th ult., at Malta, the wife of Frederick McClement, M.D., Fleet Surgeon, H.M.S. *Dreadnought*, of a son.

SAUNDERS.—On the 1st inst., at Denburn, Crail, Fifeshire, the wife of Dr. F. A. Saunders, F.R.C.S., &c., of a son.

SCATCHARD.—On the 27th ult., at Boughton-under-Blean, Kent, the wife of Walter Scatchard, M.R.C.S., of a son.

STARLING.—On the 27th ult., at Tunbridge Wells, the wife of Edwin Alfred Starling, M.B., M.Ch., of a son.

THOMPSON.—On the 1st inst., at Suffolk-place, Sevenoaks, the wife of Herbert Thompson, M.R.C.S., of twin daughters.

MARRIAGES.

COMPIGNE—HISLOP.—On the 5th inst., at St. Mary Abbotts, Kensington, Surgeon-Major H. D. S. Compigne, M.D., L.R.C.S.E., of Milton Bridge, Midlothian, to Maria, widow of E. C. Hislop, late of Clapham-park, Surrey.

CRADDOCK—TIMMINS.—On the 2nd inst., at St. Mary's, Bathwick, Samuel Craddock, of Green-park, Bath, Coroner for North Somerset, to Maria Elizabeth, only daughter of the late J. Timmins, J.P., of Green-park, Bath, and Lan, Carmarthenshire.

FOXWELL—POLLOCK.—On the 2nd inst., at the Cathedral of St. Chad, Birmingham, Arthur Foxwell, M.B., B.A.Cantab., M.R.C.P., of Temple-row, Birmingham, to Lizzie, widow of the late Robert Pollock, of St. James's-road, Edgbaston, and younger daughter of Charles Hollis, Esq., of Clinton, Torquay.

HEWKLEY—BREWIS.—On the 5th inst., at St. George's Church, Tynemouth, Northumberland, Frank Hewkley, M.B., F.R.C.S. Eng., fourth son of the late George Hewkley, to Dorothy, second daughter of John Brewis, of Tynemouth.

MORRISON—ROBERTS.—On the 26th ult., at Suez, by the Rev. William J. Loftie, B.A., F.S.A., Assistant Chaplain, Chapel Royal, Savoy, Arthur A. Morrison, M.A., M.D., to Catherine, elder daughter of W. H. Roberts, Esq., Superintendent, Peninsular and Oriental Company.

PAINE—ANTILL.—On the 5th inst., at St. Catherine's, Catherington, Hants, George Reuben Robin Paine, M.R.C.S., younger son of Joseph Cave Paine, Paymaster-in-Chief R.N., to Mary Dowland, daughter of John Dowland Antill, Esq., of Merchistoun, Horndean, Hants.

SCOTT—THOMAS.—On the 5th inst., at Cobham, Surrey, Alfred Langston Scott, M.R.C.S., of Westbourne Villa, Ealing, youngest surviving son of the late Rev. W. L. Scott, Vicar of Dunmow, Essex, to Alicia Rachel Thomas, of Hollingsbourne House, Cobham, third daughter of the late George H. Thomas, of Surbiton.

DEATHS.

BIRD.—On the 4th inst., Mary Ann, widow of Golding Bird, M.D., F.R.S., formerly Physician to Guy's Hospital, aged 74.

BUDD.—On the 28th ult., at Durnford-street, Stonehouse, Plymouth, Dr. George Budd, son of the late Dr. William Budd, F.R.S., aged 34.

DAVIS.—On the 25th ult., at Paris, of typhoid fever, Weston Peel Davis, M.R.C.S., L.R.C.P., M.D. Paris.

RENSHAW.—On the 26th ult., at Rokeby-road, Brockley, Edwin Renshaw, M.R.C.S., third son of the late Henry Renshaw, Medical Publisher, Strand, in his 45th year.

WILLIAMS.—On the 3rd inst., at Warwick-gardens, Kensington, W., John Williams, F.C.S., F.I.C., &c., sometime President of the Pharmaceutical Society of Great Britain, in his 65th year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

Monday, March 11.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. Priestley Smith: Pathology of Glaucoma.

MEDICAL SOCIETY OF LONDON.—8 P.M. The President's (Dr. C. Theodore Williams) Address. Dr. W. P. Herringham and Mr. C. B. Keetley: A case of Primary Cancer of the Pancreas, Cholecystotomy, Remarks on Diagnosis, Question of Operation, Treatment.—Mr. Hurry Fenwick: Fifteen Months' Experience of the Incandescent Lamp Cystoscope.

SOCIETY OF ARTS.—8 P.M. Mr. Walter Crane: The Decoration and Illustration of Books. (Cantor Lecture.)

Tuesday, March 12.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same days, 2 P.M.

ROYAL INSTITUTION.—3 P.M. Mr. G. J. Romanes: Before and after Darwin.

ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. Arlidge: Occupations and Trades in Relation to Public Health. (Milroy Lecture.)

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Messrs. Frederic B. Jessett and Victor Horsley: Intestinal Surgery.—Dr. H. Radcliffe Crocker: Pemphigus Vegetans (Neumann). Morbid Specimens from the case of Actinomycosis Hominis reported on Feb. 12th will be exhibited.

Wednesday, March 13.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Saturday, 2 P.M. Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

KING'S COLLEGE HOSPITAL.—Operations, 3 to 4 P.M.; Friday, 2 P.M. Saturday, 1 P.M.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical visits on Wednesday and Saturday at 9.15 A.M.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. Priestley Smith: Pathology of Glaucoma.

EPIDEMIOLOGICAL SOCIETY OF LONDON.—8 P.M. Dr. William Robert Smith: A Brief Review of our Knowledge of the Relation of Organisms to Diseases in Man.

HUNTERIAN SOCIETY.—8 P.M. Mr. Symonds and Mr. Warner: A case of Trephining for Cerebral Abscess.—Mr. Symonds: Cases of Trephining the Mastoid for Otitis.

METROPOLITAN POLICE SURGEONS' ASSOCIATION (Library, St. Thomas's Hospital).—8 P.M. General Meeting. Dr. Copeman: Medico-legal Detection of Human Blood.

ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Mr. J. Deby: Psamathiomya Pectinata, a New Dipterous Insect.

SOCIETY OF ARTS.—8 P.M. Mr. William Anderson: Aluminium and its Manufacture by the Deville-Castner Process.

BRITISH GYNÆCOLOGICAL SOCIETY.—8.30 P.M. Report from Council discountenancing the advertisement of medical books in lay papers. Dr. Macnaughton Jones: The Use and Abuse of Massage. Specimens will be shown by Dr. Bantock and Mr. Lawson Tait.

Thursday, March 14.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

MEDICO-PSYCHOLOGICAL ASSOCIATION (The Retreat, York).—4 P.M. Dr. Clifford Allbutt: Insanity of Children.—Dr. R. Baker: Ten Years' Experience in the Use of the Turkish Bath in the Treatment of Mental Disorders.—Dr. Urquhart: Case of Attempted Suicide (with Microscopic Sections by Dr. A. Keith).—Dr. Watson: Notes on the Use of Sulphonal. Members and friends will dine at the Station Hotel at 7.15.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8.30 P.M. Patients and Card Specimens at 8 P.M.:—Mr. Lawford: Drawing of Localised Choroidal Atrophy with Narrowing of Overlying Retinal Artery.—Mr. Phillips: (1) Case of Unusual Atrophy of Choroid; (2) Case of Peculiar Form of Amblyopia.—Messrs. Critchett and Juler: Case of Absence of Convergence. Papers:—Dr. Edridge-Green (introduced): On Colour-blindness and Colour-perception.—Dr. Bailey: On an Improved Knife for Cataract Incisions.—Mr. J. Hutchinson, jun.: (1) Ulcerative Endocarditis with Retinal Hæmorrhages; (2) Central Choroiditis due to Concussion of the Eye.—Messrs. Edmunds and Lawford: Retinal Changes in a Fatal case of Alcoholism.

ROYAL INSTITUTION.—3 P.M. Dr. Sidney Martin: The Venom of Serpents and Allied Poisons.
ROYAL COLLEGE OF PHYSICIANS.—5 P.M. Dr. Arlidge: Occupations and Trades in Relation to Public Health. (Milroy Lecture.)
HARVEIAN SOCIETY OF LONDON.—8.30 P.M. Mr. Butlin: Pre-cancerous Conditions of the Tongue.

Friday, March 15.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. Priestley Smith: Pathology of Glaucoma.
ROYAL INSTITUTION.—9 P.M. Sir James N. Douglass: Beacon Lights and Fog Signals.

Saturday, March 16.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.
ROYAL INSTITUTION.—3 P.M. Rt. Hon. Lord Rayleigh: Experimental Optics (Polarisation; Wave Theory).

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 7th, 1889.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Mar. 1	29·87	E.	33	..	65	38	31	·07	Cloudy
,, 2	29·96	N.E.	32	..	47	36	30	..	Overcast
,, 3	29·99	N.E.	31	..	61	36	27	..	Bright
,, 4	30·01	E.	29	..	72	38	25	..	Foggy
,, 5	30·15	E.	30	..	67	39	26	..	Cloudy
,, 6	30·13	S.W.	37	33	71	47	29	..	Cloudy
,, 7	29·49	S.	40	39	..	47	36	·10	Raining

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed to the Sub-Editor.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "to the Publisher."*

We cannot undertake to return MSS. not used.

THE CASE OF MR. HOWARD OF EALING.

Mr. Wickham Barnes, on behalf of the Association of Poor-law Medical Officers, asks us to state that in the copy of the resolution relating to the case of Mr. Howard of Ealing, and printed in THE LANCET of Feb. 9th, the word "alleged" was inadvertently omitted. It should have preceded the words "pauper lunatic."

G. C. C.—An examination, more or less competitive, has to be undergone before appointment to the Medical Department of the Convict Service. If our correspondent will send an application to the Directors of Convict Prisons, Home Office, Whitehall, London, he will be supplied with the necessary forms and further particulars on the subject.

Mr. Watts (Hovingham).—We do not see any reason to revert to the matters rediscussed in our correspondent's letter.

Mr. James Oliver.—We regret we are unable to promise the insertion of the paper.

INCOME-TAX ASSESSMENTS

To the Editors of THE LANCET.

SIRS,—Allow us again this year to call attention to the fact that in all cases where the profits of the year have not been equal to the assessment—and we fear that in many cases they have not been—traders should apply for relief and repayment of tax. This repayment can either be allowed on the difference between the assessment and the average of the three years' profits or between the assessment and the year's profits, whichever is most advantageous to the Treasury. This is scarcely fair. However, the tax-payer must be thankful for small mercies. Persons who intend to claim should obtain "Income-tax: How to Get it Refunded," and in making out their accounts should use the forms therein recommended. Chapman's "Inhabited House Duty" and Laurie's "How to Appeal against your Rates" are two other little books which we strongly recommend. Armed with these three, no person should be over-taxed, over-assessed, or over-rated.

We are, Sirs, your obedient servants,

Colville-terrace, W. THE INCOME-TAX REPAYMENT AGENCY.

VACCINATION AND SMALL-POX.

ACCORDING to a St. Petersburg journal, a young medical man of anti-vaccinationist proclivities, having settled down in practice in a certain district of the government of Kostroma, found himself greatly in his element, as the local peasantry were themselves mainly of that way of thinking. All went well enough till an epidemic of small-pox came. Then, as may be supposed, the havoc it caused was terrible, the official statistics returning 1700 deaths—a number which is said to be very far short of the truth. In fifteen or sixteen villages every one of the children died. In one parish, where the total number of children was 2370, the number attacked by the disease was 1095.

G. R.—The changes in the various examinations are fully set forth in our last issue, page 434.

Mr. Stephen Paget.—The paper will appear in an early number.

Dr. E. Roughton.—Province Médicale, Feb. 7th.

"MEDICAL PRACTICE IN AUSTRALIA."

To the Editors of THE LANCET.

SIRS,—A letter appeared in your issue of Feb. 9th *re* the above matter signed "W. P." On the whole, I consider it a very true sketch, but somewhat incomplete in some important respects. Your correspondent's remarks concerning clubs are by no means overdrawn; and it may be mentioned that some of the leading practitioners of Melbourne contract for clubs sometimes at a lower rate than outside practitioners, and that one of these practitioners actually offered to attend a club for six months gratuitously. To my consideration, this proves that the practice of the capitals does not bring large results. It has been stated in my hearing that a year or so ago the majority hardly paid their expenses, which are extortionately high in the colonies. Then, as to quackery (which is rampant in all the colonies, and which, it is to be feared, will be increased by the influx of those shut out of the United States by the recent anti-quackery legislation), it may be mentioned that the Chief Secretary of Victoria has forbidden the police to prosecute unregistered practitioners, saying that the medical men or some other person must prosecute. Your correspondent has only mentioned the practice in the towns. In the country the life is very rough; there is no society whatever, very little practice, and money is only to be made by "mileage," which is not very pleasant, as there are generally no made roads, and in some cases "bullock" or "bush tracks," or no track at all. In fact, the only thing a practitioner can find to do very often is to drink very bad whisky and play cards or billiards with the "banker" or anyone else he can find. I speak from experience, having acted as locum tenens in the country. Your correspondent, in my opinion, errs in the statement that "there are plenty of qualified advertisers." On the whole, the condition of medical etiquette in Australia is much above that of the mother country. To sum up, the population of the colonies is about three millions. The Melbourne University qualifies nearly thirty men every year, and Sydney, Adelaide, &c. qualify a like proportion; also a large number of colonial-born men return from the Colleges of Edinburgh and London, where the course is much shorter in duration. With these considerations a man with some means would do as well, or perhaps much better, in England than in Australia; for it is no use to go to Australia without means "to live in a good position and keep up a showy appearance" *for more* than a year or two. The "good old times" are at an end in Australia for the medical as well as other professions, and by competition and "clubs" the practice of medicine is reduced, as in the "home" country, to a means for a mere subsistence. Concerning reduction of fees, it must be borne in mind that 7*s.* 6*d.* (the usual town and suburban fee for general practitioners) is about equal to from 2*s.* 6*d.* to 3*s.* 6*d.* in England.—I am, Sirs, yours respectfully,

Feb. 25th, 1889. M.R.C.S.

"THE HOSPITAL HABIT."

To the Editors of THE LANCET.

SIRS,—In your excellent article of Feb. 9th you say, "We must help ourselves." In order to do that we must have a leader unselfish, persevering, and leisured; for although we may have unanimity—unanimity to tell the almsgiving public how their charity is spoiled, &c.,—yet, to have any effect upon such a body as the General Medical Council, our unanimity must have tangible form. Having that, our first duty would be to attack the huge mass of medical charity by securing an Act making it compulsory that all medical charities must be licensed by the Council, thus obtaining control over our hospitals. Numbers of cases presenting no difficulty and well able to pay the small fees of orthodox men daily stream off to the hospitals, general and special, free dispensaries, truss societies, &c. The very poor go to the parish or to the sixpenny men; it is the hospital that takes the classes immediately above. How often do we attend such through a serious illness, only to find that the sequelæ, because they happen to affect eye, ear, throat, or nervous system, are, with a chorus of advice from friends, carried to the special hospital, and thenceforward they easily glide into the "hospital habit." Thousands of pounds are annually lost to the London general practitioner by this lavish advice given broadcast by our leaders. As to the sixpenny men, what can be said against them when the "best advice in the kingdom" can be obtained from the staff of a noble institution bearing the honoured name of Guy for 3*d.*, including medicine (for that is how the public interpret it)? The sixpenny schism must be combated locally by the provident dispensaries (licensed) and that local unanimity of which Mr. Nicholls speaks so well (Feb. 2nd, p. 247).

I am, Sirs, your obedient servant,

Feb. 12th, 1889. PARISH DOCTOR.

HARD TIMES IN THE PROFESSION.

THE *Sheerness Guardian* announces that the Committee of the Sheerness Medical Society has selected a gentleman for the post of principal medical officer out of 115 applicants! The testimonials of this successful gentleman are lauded as guaranteeing superiority in all branches, and in a way to give him a lift in private practice, which he is to be allowed as a supplement to his £300 a year. Unless this society is very unlike others of the sort, the principal medical officer will have little time to spare for private practice after doing all the work expected of him for his £300 a year.

Mr. R. Hayyard.—We cannot say at the moment if the affection referred to is treated in detail in any of the various books on children's diseases.

Mr. Kirkham (Downham Market).—Very shortly.

MEDICAL ETIQUETTE.

To the Editors of THE LANCET.

SIRS,—On Saturday evening last I was summoned to attend an urgent case about two miles from my surgery, and on reaching the bedside I found that the patient was under the charge of another practitioner. On hearing this I at once retired, and declined to give an opinion on the case. The explanation given by the patient's friends was that they wished for a consultation, and had sent for my opponent and myself in order that we might meet there. This, however, I explained, was not the proper method for obtaining a consultation, and after informing them that I must be summoned through their own medical attendant I left. The patient died on Sunday, and I have since received the following letter from the other practitioner. I should like an expression of opinion as to how far this is consistent with the recognised rules of medical etiquette. I am, Sirs, yours very truly,

Ashton-in-Makerfield, Feb. 26th, 1889. NATHAN HANNAH.

"DEAR SIR,—I shall make a note of your visit to T—— N—— last night, for reference at some future date when a patient under *your* immediate treatment may send for *me*. "Yours &c.,

"—— ——."

*** We cannot see that our correspondent did anything of which his neighbour practitioner could complain. Any irregularity of proceeding was apparently due entirely to the ignorance of the patient's friends as to the way to arrange a consultation. This is a very pardonable error, especially when people are perplexed with illness and approaching death. It is to be regretted that some way of securing the consultation was not found; for every dying person and his friends are entitled to such a satisfaction. We cannot but think the letter complained of was written under a misapprehension of the facts of the case.—ED. L.

CRANIOTOMY.

To the Editors of THE LANCET.

SIRS,—In reference to the case of craniotomy reported in your last issue by Mr. Hackett of Gorton, there are several points involved of infinitely greater moment than the one which is the apparent cause of its publication. The first is, On what principles were the forceps applied to the aftercoming head? The second, What was the probable cause of the rigor on the fifth day? The third, Were antiseptics used, and if so, what, and in what manner?

I am, Sirs, your obedient servant,

March 3rd. L. D.

"LETTSOMIAN LECTURES."

To the Editors of THE LANCET.

SIRS,—In the last issue of THE LANCET "Physician" alludes to the treatment of patients with iodide of potassium for syphilis, suggested by the Lettsomian Lectures. In the third volume of the collected edition of Sir Benjamin Brodie's lectures, page 675, there will be found some remarks by Sir B. Brodie on this subject worthy of his attention. I am, Sirs, yours truly,

March 6th, 1889. A SURGEON.

MIDWIFERY FORCEPS.

Mr. Blenkarne writes to say that he did not borrow Dr. Haslam's forceps from him, as might be inferred from a sentence in the letter of the latter gentleman published last week. They were supplied to Mr. Blenkarne by the instrument makers at his request.

Mr. C. Hand.—The evidence forthcoming is not sufficient to warrant the conclusion that bicycle-riding is likely to give rise to fistula. The cases mentioned may be simply coincidences.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Wilks, London; Mr. F. Treves, London; Mr. Blair, Leeds; Dr. A. Money, London; Mr. S. Snell, Sheffield; Dr. Prendergast, Paris; Dr. Hunter Mackenzie, Edinburgh; Dr. Campbell Black, Glasgow; Dr. Leslie Phillips, London; Mr. T. W. Nunn, London; Messrs. Burroughs and Wellcome; Dr. J. H. Waters, London; Mr. Branson; Mr. Blenkarne, Leicester; Dr. G. H. Allden, Henley; Mr. Falla, St. Heliers; Mr. E. Ellis, London; Messrs. Quibell Brothers; Mr. J. Dickson, Arundel; Mr. Rentoul, Liverpool; Dr. E. Haughton, Norwood; Dr. Norman Kerr, London; Dr. E. M. Sympson, Lincoln; Mr. Kirkham, Downham Market; Dr. Junker, London; Mr. W. H. Brown, Leeds; Mr. Craig Balfour, Redbourne; Mr. Meadows, Hastings; Messrs. Hughes and Morris, London; Mr. Lockwood, London; Dr. Cartwright Reed, South Africa; Surgeon-Major T. Hume, Bangalore; Mrs. Gourley, West Hartlepool; Brigade-Surgeon K. McLeod, Calcutta; Messrs. Lindsey and Sons, London; Dr. J. Anderson, Barrow; Col. Legge; Mr. Hugh Law, Bath; Dr. E. C. Stirling, Melbourne; Mr. F. R. Fisher, London; Dr. Duprey, Paris; Mr. Bergman, Huntingdon; Dr. Wigmore, Macclesfield; Mr. Mackay, Glasgow; Mr. Biddle, Kingston; Dr. Allwright, Brighton; Mr. J. B. Smith, Dulwich; Mr. A. J. H. Crespi, Wimborne; Dr. L. C. Badcock, Brighton; Dr. Roughton, London; Mr. E. Scott, Northampton; Mr. Poland, London; Dr. Bailey, Bilston; Dr. Lowe, Lincoln; Mr. B. G. Corney, Fiji; Mr. Kennedy, London; Mr. Ferney, Swindon; Mr. MacDowall; Mr. C. Hand; Dr. Maynard, Erith; Mr. J. W. Hobbs, Croydon; D.; J. B. E.; Medicus, London; Finance, Twickenham; Sigma, London; Alpha, London; B. K., London; Victimised, Brisbane; M.R.C.S., L.R.C.P.; A Surgeon; M.D.; Brighton; G. R.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Byrom Bramwell, Edinburgh; Dr. Mackay, Durham; Mr. Williams, Port Isaac; Mr. Arbenz, Birmingham; Dr. Murrell, London; Mr. Golding Bird, London; Mr. Watt, London; Mr. Levick, Paris; Mr. Annibale De Giacomi, Napoli; Mr. Stenhouse, Glasgow; Messrs. Eason and Son, Dublin; Mrs. Ernst, London; Mr. O'Flaherty; Messrs. Hooper and Co., London; Mr. Russell, Liverpool; Messrs. Mertens and Co., London; Mr. Masson, Paris; Mr. Dunk, Yorks; Messrs. Farrant and Co., Exeter; Dr. Martin, Farnworth; Mr. Hornibrook, London; Mr. Heywood, Manchester; Mr. C. Buckley, Notts; Major Pead, Dulwich; Messrs. Bennett Brothers; Fidelis, London; M.B., London; Medicus, Leeds; Surgeon, Gloucester; Galen, London; Derbyshire General Infirmary; Delta, Mons.; Herbert, Kidderminster; North Lond. Inst.; M.D., Barking; A. A., London; Zero, London; Southern Hospital, Manchester; Pleximeter, London; Mrs. J., Yorks; M.B., Devon; J. H. N., London; Dispatch, Clapham; A. E. H., London; Dubois, London; General Medical Council; X. Y. Z., London; T. A. J., London; Alphabet, London; Surgeon, Bristol; R. C., London; Vim, London; Medicus, Yorks; V. C., London; Ibid., London; Medicus, Liverpool; Chirurgus, London; Provincial, London; Medicus, Margate; Minstrel, London; Indicus, London; T. H. P., London.

Scotsman, South Wales Echo, Herald and Weekly Free Press, Sheffield Daily Telegraph, West Middlesex Standard, Hertfordshire Mercury, Bristol Evening News, Surrey Advertiser, Mining Journal, Evening Telegraph and Star, Observer and Chronicle (Bournemouth), Christian Life, Leeds Mercury, West Sussex Gazette, Surrey Comet, Photographic Art Journal, Colchester Gazette, Assure, Theological Monthly, &c., have been received.

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